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OCEAN WEATHER STATION 'P'
NORTH PACIFIC OCEAN

9123

September 17 to December 15, 1965

CODC References: 02-65-009
02-65-010

No. 6-10

1966 Data Record Series

Canadian Oceanographic Data Centre
615 Booth St., Ottawa, Canada

Programmed by the Canadian Committee on Oceanography



FISHERIES RESEARCH BOARD OF CANADA

Ocean Weather Station "P" North Pacific Ocean

Ships:	CCGS " St. Catharines"	CCGS "Stonetown"
Local Cruise Designations:	P-65-4	Patrol No. 67
Cruise periods:	Sept. 17 - Nov. 2, 1965	Nov. 3 - Dec. 15, 1965
Observer:	D. G. Robertson	

PACIFIC OCEANOGRAPHIC GROUP - Nanaimo, B. C.

SECTION I

Description of data collection procedures

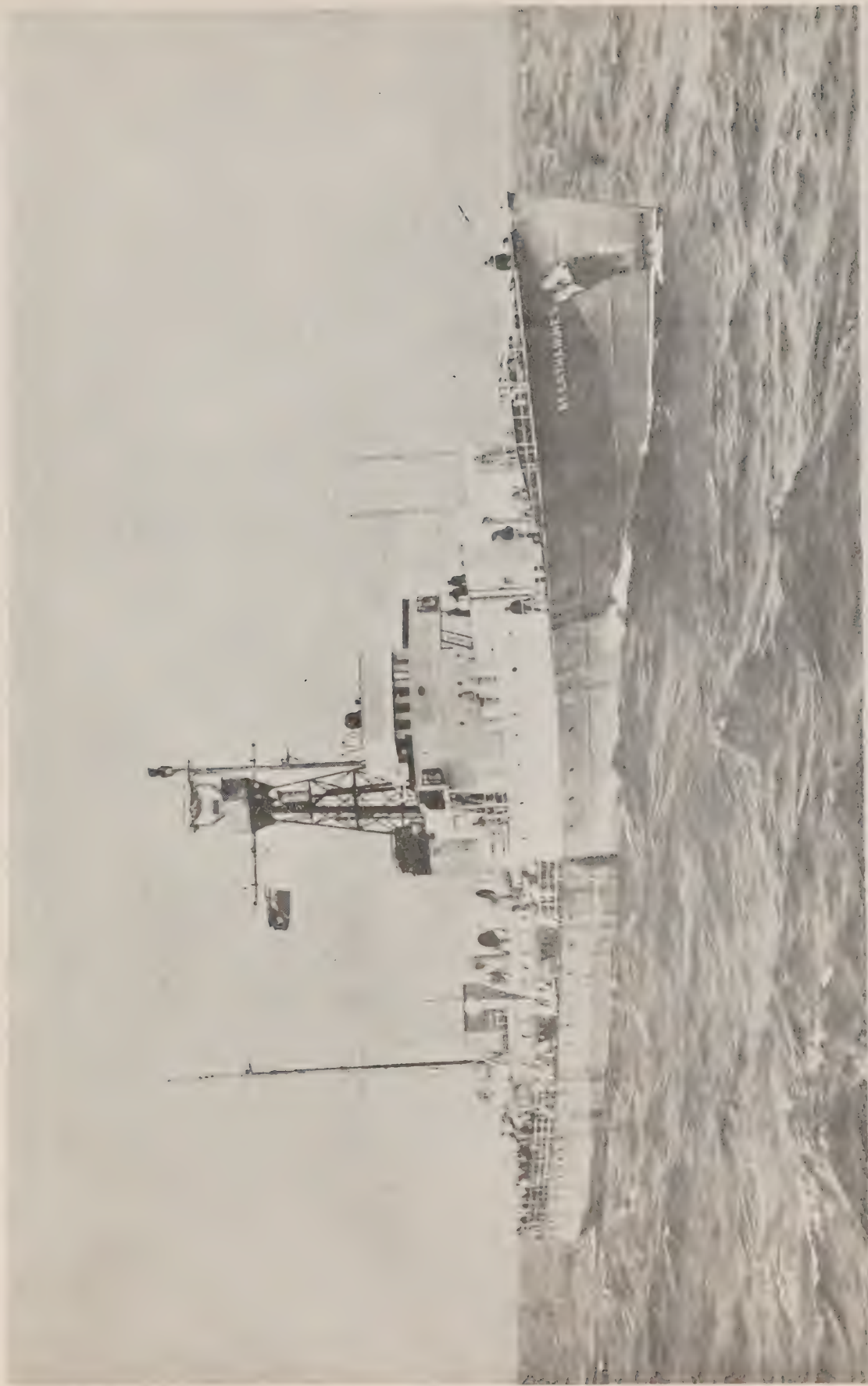


Figure 1.

The Canadian Weather Ship C.C.G.S. " St. Catharines " (D.O.T. Photo)

The oceanographic winch is located on the starboard side of the signal deck, just aft of the bridge wing.



Figure 2.

The Canadian WeatherShip C.C.G.S. "Stonetown".

(D.O.T. Photo)

Bathythermograph soundings boom can be seen below the bridge on the signal deck.

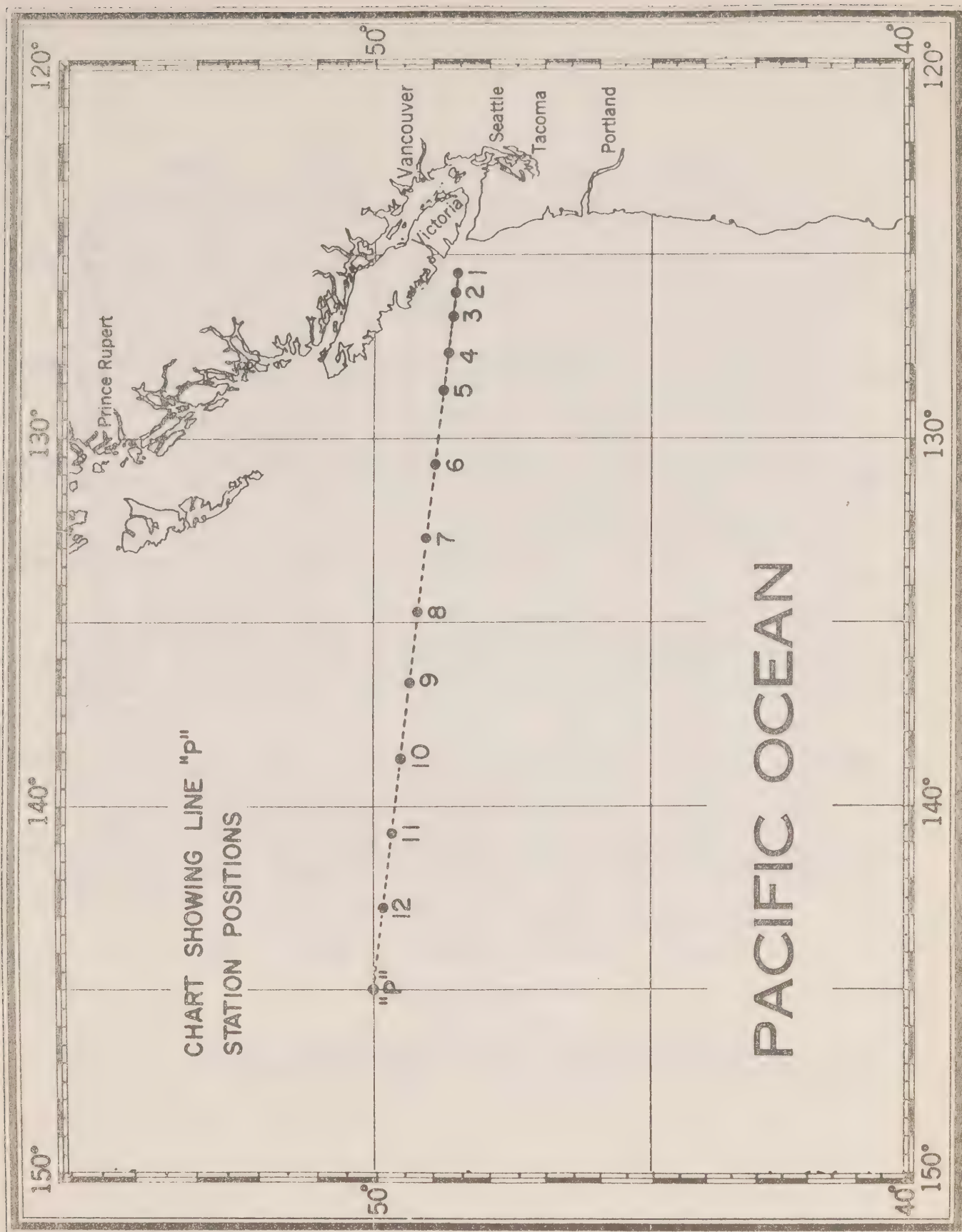


Figure 3

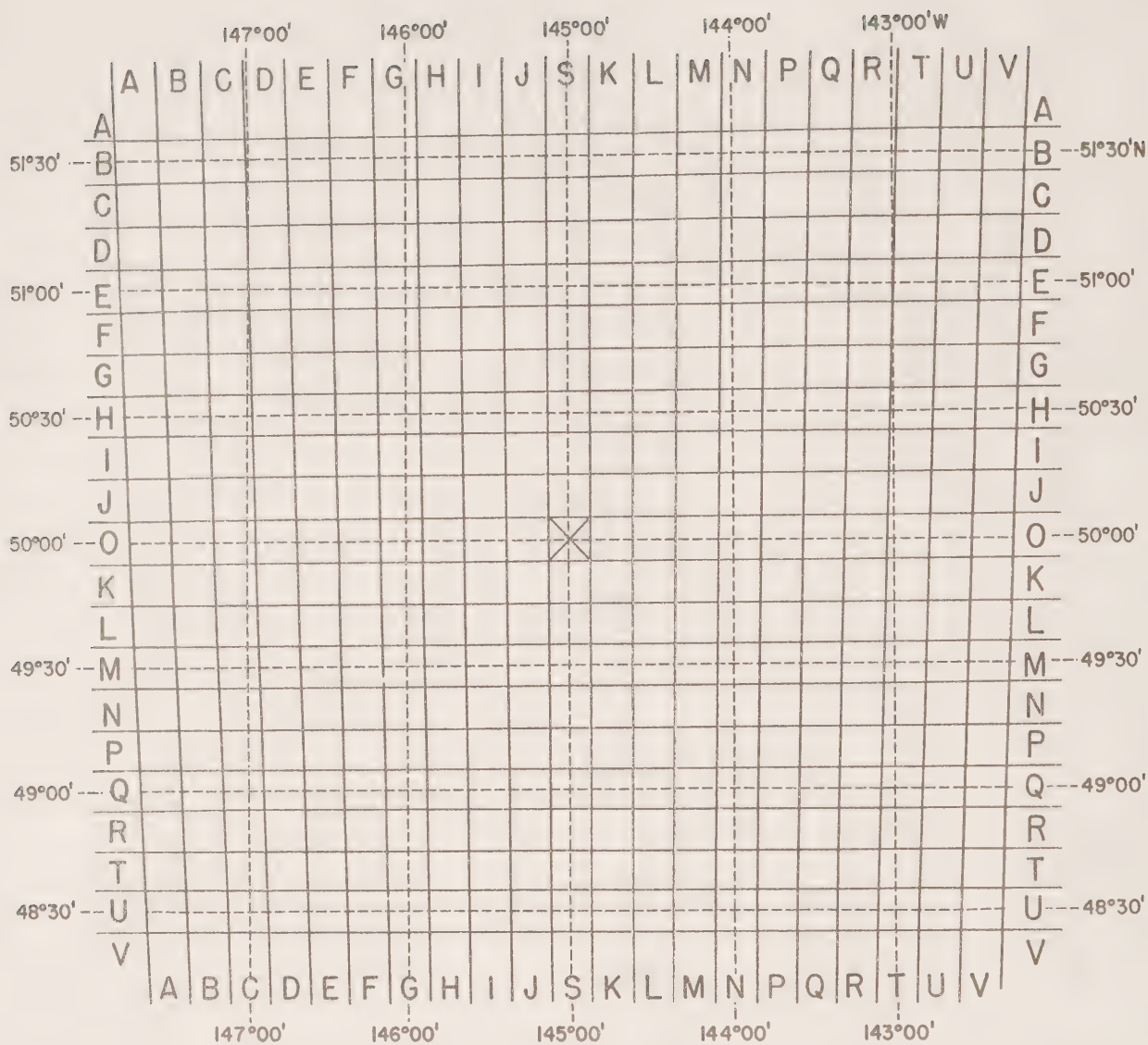


Figure 4 .

Position indicating grid for Ocean Weather Station "P", with a mercator projection of a latitude and longitude grid superimposed.

INTRODUCTION

Canadian operation of Ocean Weather Station "P" (latitude 50°00'N, longitude 145°00'W) was inaugurated in December 1950. The Station is manned by two vessels of the Canadian naval frigate class operated by the Marine Services of the Department of Transport. They are the CCGS "St. Catharines" and the CCGS "Stonetown" (Fig. 1 and 2) (Atlantic Oceanographic Group, MS, 1961). Each ship remains on Station for a period of 6 weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch. The chief purpose of the Station is to operate as a meteorological station for surface and upper-air observations, and as an air-sea rescue station.

Bathythermograph observations have been made at Station "P" since July 1952. A program of more extensive oceanographic observations was commenced in August 1956. Since April 1959, a series of oceanographic stations has been frequently observed along the route between Station "P" and Swiftsure Bank (Fig. 3).

The CCGS "St. Catharines" is equipped with deck and laboratory facilities required to make bathythermograph and oceanographic observations. Oceanographers from the Pacific Oceanographic Group accompany the ship on each patrol. The CCGS "Stonetown" is equipped with bathythermograph equipment only. The BT observations on both ships are made by members of the ship's crew.

CRUISE LOG, CCGS "ST. CATHARINES", SURVEY P-65-4

- September 17: departed from Esquimalt, B. C.; observed 10 oceanographic stations enroute to Station "P".
- September 20: rendezvous with CCGS "Stonetown".
- September 21: commenced a series of 8 oceanographic stations located on an 80-mile square centered on grid position OS.
- September 24: continued with regular oceanographic observations program at Station "P", including plankton hauls and other productivity measurements.
- October 25: observed 7 oceanographic stations on the 80-mile square survey pattern.
- November 1: relieved by CCGS "Stonetown" and proceeded on return journey; one station observed enroute.
- November 4: docked at Esquimalt, B. C.

OCEANOGRAPHIC STATION OBSERVATIONAL PROCEDURES

1. Samples at depths were obtained with Nansen reversing water sample bottles. Stations to 400 m depth were observed in one cast; stations to 1500m were observed in two casts: 10 to 400 m and 500 m to the deepest depth; stations to 4200 m were observed in 2 casts: 10 to 600 m, and 800 m to the deepest depth.

2. Seawater temperatures (except 0 m) were measured with protected reversing thermometers of German or Japanese manufacture. The arrangement of the thermometers on the water sample bottles was as follows: 10 to 125 m, 2 protected thermometers at each depth; 150 to 250 m, 3 protected thermometers at each depth; 300 m to deepest bottle, 2 protected and one unprotected thermometer at each depth.

3. Surface samples (0 m) for salinity and dissolved oxygen determinations were obtained in a one-gallon plastic bucket. The surface temperature was measured in this sample with an armoured thermometer graduated in 0.5C° intervals.

4. Water transparency observations were made with a white secchi disc of 30 cm diameter.

5. Station locations were determined by the officers of the watch, who also made the meteorological observations reported with the oceanographic data.

A new series of oceanographic stations has been added to the regular observation program at Ocean Station "P". At the beginning and end of each patrol by CCGS "St. Catharines", a series of 8 stations to 1500 m depth are observed at 40 mile intervals along a survey track which is 80 miles square, and which is centered on the

OS grid square. The stations are specially identified in the data record by the grid-designator letter group in the STN entry of the master heading section. A 150 m vertical plankton haul is also made at each of these stations.

LABORATORY PROCEDURES

The salinity determinations of the oceanographic station samples and the surface samples collected during Survey P-65-4 were made with an inductive salinometer, Model 601 MK III, manufactured by Auto-Lab Industries Pty. Ltd., Sydney, Australia (Brown and Hamon, 1961). Most of the samples were analysed on board ship. The salinity data are the means of duplicate determinations whose "conductivity ratio" values fell within an acceptable range. The accuracy of the determinations at the 35‰ salinity level is stated to be $\pm 0.003\%$ (Brown and Hamon, 1961). The surface samples collected during the "Stonetown" Patrol No. 67 were analysed in the shore laboratory using the MK III conductivity salinometer. These data are from a single determination and have an accuracy range of $\pm 0.009\%$ at the 95% probability level (Strickland, MS, 1958).

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Strickland and Parsons, 1965)

BATHYTHERMOGRAPH OBSERVATIONS

BT observations were made by both ships enroute to and from Station "P" at each 40' interval of longitude, whenever weather and operating schedule permitted. On Station, BT observations were made every 3 hours continuously throughout the patrol, except during intervals of rough weather.

The BT traces obtained during Survey P-65-4 and Patrol No. 67 were processed in the BT-aperture card format of the CODC (Sauer, 1964). The bathythermograms presented in Section IV of the data record were reproduced from these BT-aperture cards. The consecutive number entered below each bathythermogram refers to an entry in Table 1 which lists the information concerning time/date, position, and associated meteorological conditions. For Patrol No. 67, the meteorological data have been transferred to the BT-aperture cards from the No. 9 Marine Data Cards supplied by the Meteorological Branch of the Department of Transport, Toronto.

PERSONNEL

The oceanographers on board CCGS "St. Catharines" during Survey P-65-4 were Messrs. D. G. Robertson (in charge) and K. Gantzer. The officers and men of both weatherships made the BT observations, and the crew of "St. Catharines" gave excellent assistance during the oceanographic observations.

SECTION 11

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "estimate of precision" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The measurement error estimate of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "interpolation error estimate" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; first, to give an indication of the quality of the interpolated data; second, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , σ_t) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "measurement error estimate" comprises the "combined measurement and interpolation error estimate". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

1 IDENT. CODE		2 LATITUDE (N = +)		3 LONGITUDE (W = +)		5 DATE		6 TIME		7 DEPTH		9 NO. DEPTHS OBS'D.		VESSEL																																																																	
COUNTRY	INST.	DEG.	MIN.	DEG.	MIN.	YEAR	MONTH	DAY	HOURS	MIN.	TO BOTTOM			ENTERED BY	CHECKED BY																																																																
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	34 35																																																																
10	WATER	11	WAVES I	12	WAVES II	13	WIND	14	BAROMETER	15	AIR TEMP.	16	WET BULB	17	W.W. CODE	18	CLOUD TYPE	19	HOURS AFTER H.W.	20	UNASSIGNED	21	CRUISE REFERENCE NUMBER	22	CONSEC. NUMBER	23	24																																																				
COLOUR	TRANS.	DW	DW	PW	Hw	DW	DW	PW	Hw	DIR.	FORCE																																																																				
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
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$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $^{1/3} (\bar{V}_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$.

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the combined measurement and interpolation error estimate. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the interpolation error estimate is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFERENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.

(2) CONSECUTIVE NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation.

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/
INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).

00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: The Forel-Ule Code (see table 2 and NOTE under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;

NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.

- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the **predominant non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_3
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 C1\%$, reported in:
a. 1/100 parts per 1000, or
b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

- (8) PO_4 Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
- (9) -P- Total Phosphorus reported to hundredths of microgram-atoms per litre.
- (10) NO_2 Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included —
- (11) NO_3 Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
- (12) SiO_2 Silicate-Silicon reported in whole microgram-atoms per litre.
- (13) pH The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

- | | | | | | |
|-------------|------------|----------|------------|----------|-----------|
| (1) DEPTH | (2) TEMP | (3) SAL | (4) OXYGEN | (5) SGMT | (6) SOUND |
| (7) DELTA-D | (8) POT-EN | (9) SVA. | | | |

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
 - (i) the interpolation error estimate is less than twice the standard deviation of measurement
 - the interpolated value is reported to three decimal places (e.g., 30.139).
 - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 - the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 - the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

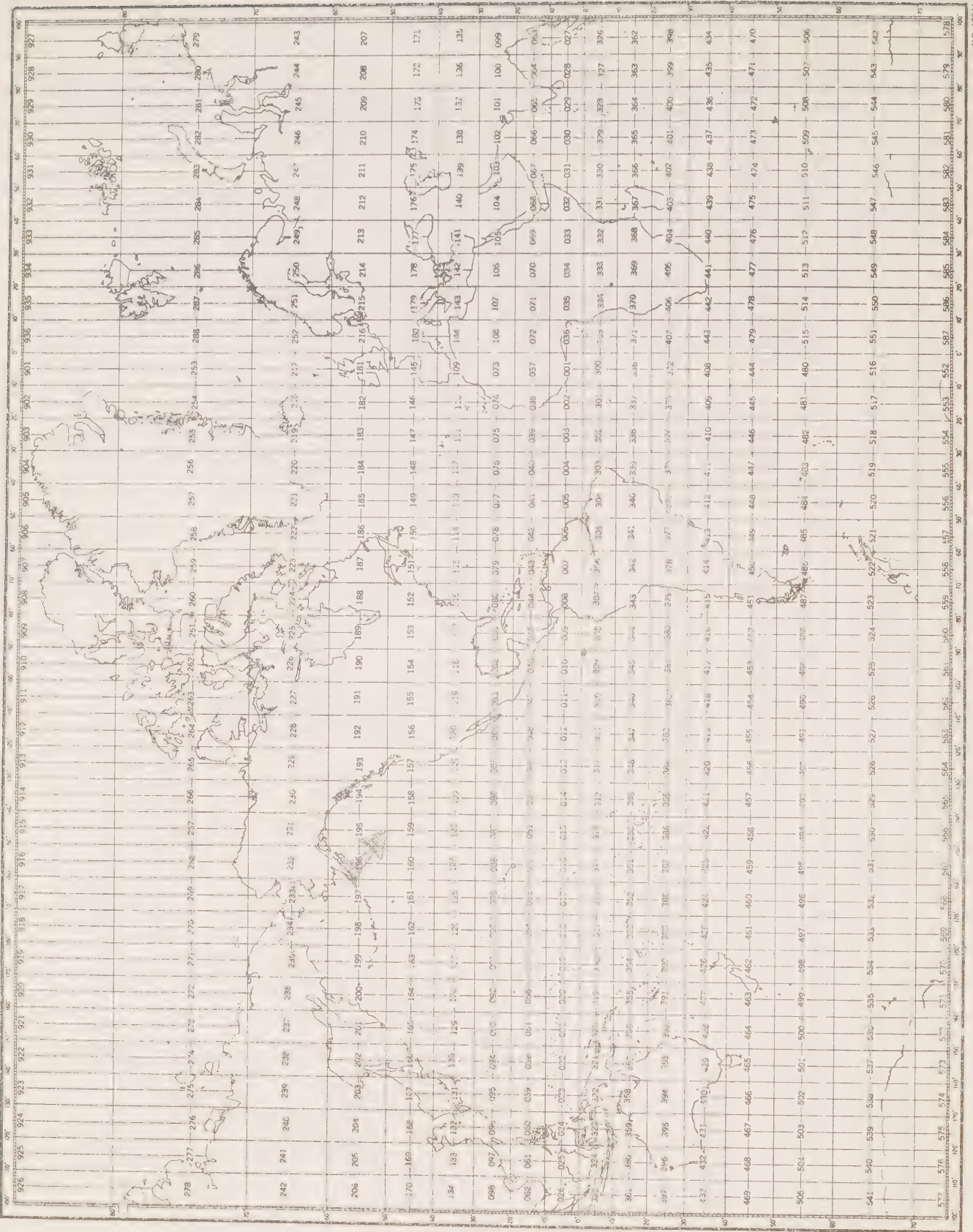
- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^p \delta \rho dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = \frac{1}{g} \int_0^p \rho \delta dp = \int_0^z \rho \delta dz$$
- χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

* (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within **any one observed depth interval**. The **third**, and all consequent levels are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.

Q: appears occasionally in this data record, preceding an observed oxygen value. This "questionable" indicator infers that the value does not fit the usual pattern of oxygen distribution. "The questionable" value could be due to a sampling error and, generally, is not a result of an error in determination.



MARS DEN SQUARE CHART

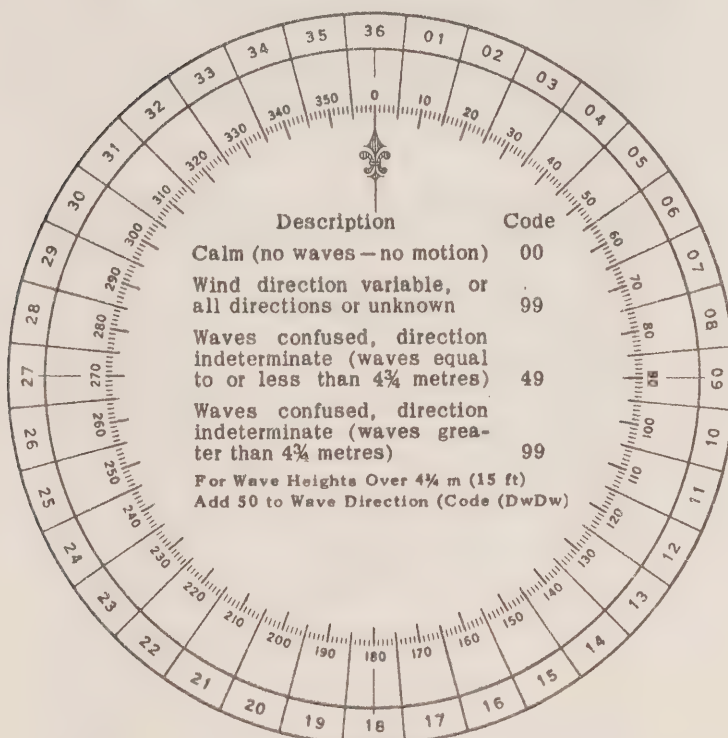
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)		4 7 m (22½ ft)
5	2½ m (8 ft)		5 7½ m (24 ft)
6	3 m (9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Add
50
to
Dw Dw

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

	Code figure ww		
No meteors except photometers	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
Haze, dust, sand or smoke	03	Clouds generally forming or developing	
	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	} at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
ww = 20 - 29			
	20	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	} not falling as shower(s)
	21	Drizzle (not freezing) or snow grains	
	22	Rain (not freezing)	
	23	Snow	
	24	Rain and snow or ice pellets, type (a)	
	25	Freezing drizzle or freezing rain	
	26	Shower(s) of rain	
	27	Shower(s) of snow, or of rain and snow	
	28	Shower(s) of hail, or of rain and hail	
	29	Fog or ice fog	
ww = 30 - 39			
	30	Thunderstorm (with or without precipitation)	
	31	Duststorm, sandstorm, drifting or blowing snow	
	32	Slight or moderate duststorm or sandstorm	} - has decreased during the preceding hour
	33		
	34	Severe duststorm or sandstorm	} - no appreciable change during the preceding hour
	35		
	36	Slight or moderate blowing snow	} - has begun or has increased during the preceding hour
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	} generally low (below eye level)
	39	Heavy blowing snow	
ww = 40 - 49			
	40	Fog or ice fog at the time of observation	
	41	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	42	Fog or ice fog in patches	
	43	Fog or ice fog, sky visible	} has become thinner during the preceding hour
	44	Fog or ice fog, sky invisible	
	45	Fog or ice fog, sky visible	} no appreciable change during the preceding hour
	46	Fog or ice fog, sky invisible	
	47	Fog or ice fog, sky visible	} has begun or has become thicker during the preceding hour
	48	Fog or ice fog, sky invisible	
	49	Fog, depositing rime, sky visible	
	50	Fog, depositing rime, sky invisible	

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

50	Drizzle, not freezing, intermittent	} slight at time of observation
51	Drizzle, not freezing, continuous	
52	Drizzle, not freezing, intermittent	} moderate at time of observation
53	Drizzle, not freezing, continuous	
54	Drizzle, not freezing, intermittent	} heavy (dense) at time of observation
55	Drizzle, not freezing, continuous	
56	Drizzle, freezing, slight	
57	Drizzle, freezing, moderate or heavy (dense)	
58	Drizzle and rain, slight	
59	Drizzle and rain, moderate or heavy	

ww = 60 - 69 Rain

60	Rain, not freezing, intermittent	} slight at time of observation
61	Rain, not freezing, continuous	
62	Rain, not freezing, intermittent	} moderate at time of observation
63	Rain, not freezing, continuous	
64	Rain, not freezing, intermittent	} heavy at time of observation
65	Rain, not freezing, continuous	
66	Rain, freezing, slight	
67	Rain, freezing, moderate or heavy	
68	Rain or drizzle and snow, slight	
69	Rain or drizzle and snow, moderate or heavy	

70 - 79 Solid precipitation not in showers

70	Intermittent fall of snow flakes	} slight at time of observation
71	Continuous fall of snow flakes	
72	Intermittent fall of snow flakes	} moderate at time of observation
73	Continuous fall of snow flakes	
74	Intermittent fall of snow flakes	} heavy at time of observation
75	Continuous fall of snow flakes	
76	Ice prisms (with or without fog)	
77	Snow grains (with or without fog)	
78	Isolated starlike snow crystals (with or without fog)	
79	Ice pellets, type (a)	

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

80	Rain shower(s), slight	
81	Rain shower(s), moderate or heavy	
82	Rain shower(s), violent	
83	Shower(s) of rain and snow mixed, slight	
84	Shower(s) of rain and snow mixed, moderate or heavy	
85	Snow shower(s), slight	
86	Snow shower(s), moderate or heavy	
87	Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed	} - slight
88		
89	Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder	} - moderate or heavy
90		
91	Slight rain at time of observation	
92	Moderate or heavy rain at time of observation	
93	Slight snow, or rain and snow mixed or hail at time of observation	} thunderstorm during the preceding hour but not at time of observation
94	Moderate or heavy snow, or rain and snow mixed or hail at time of observation	
95	Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation	
96	Thunderstorm, slight or moderate, with hail at time of observation	
97	Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation	} thunderstorm at time of observation
98	Thunderstorm, combined with duststorm or sandstorm at time of observation	
99	Thunderstorm, heavy, with hail at time of observation	

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
x	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{5}{8}$ n.m.)
4	1-2 km (approx. $\frac{5}{8}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11

CCO Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, Ste. Anne de Bellevue, P.Q.
05. Biological Station, St. John's, Nfld.
06. Station de Biologie Marine, Grande Riviere, P.Q.
07. Marine Sciences Branch, Central Region.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography, (MSB, Atlantic Region).
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Institute of Oceanography, University of British Columbia.
14. Institute of Oceanography, Dalhousie University.
15. Marine Sciences Branch, Pacific Region.
16. Department of Transport.
17. Marine Sciences Centre, McGill University.
18. RCN East Coast.
19. RCN West Coast.
20. Ontario Water Resources Commission.
21. Dept. National Health and Welfare
22. Water Research Branch, Dept. of Energy, Mines and Resources.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

Institute: Pacific Oceanographic Group
Nanaimo, B.C.

Observation Platform: CCGS "St. Catharines"

Vessel's cruising speed: 13 knots

Total number of stations occupied: 37

Anemometer height above sea level: 19 metres

Water transparency: Secchi Disc.

Barometer readings: Aneroid Barometer (corrected)

Air temperature: Sling Psychrometer

Wet bulb temperature: Sling Psychrometer

Surface sea water temperature: Bucket sample (deck thermometer)

Depth to bottom: U.S. Coast and Geodetic Survey
Chart 8500

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003
Oxygen	0.03

C-REF-NO 009 YR 1965 DEPTH 131 WAVES 1 00X0 AIR T 12.7 VIS 5
 CONS. NO 001 MCNTH 9 MXSAMPD 01 WAVES 2 2744 WET B 11.1 STN 001
 LAT 48-330N DAY 17 NO.DPTH 7 WND-DIR CALM WW-CODE 02
 LON 125-330W HR 17.6 W-COLOR WND-SPD 00 CLD-TPE 7
 MARSD SQ 157 C/I 1802 W-TRNSP BARO 1019.0 CLD-AMT 4 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
176	0000	130 B	32420		2442	14977
176	0010	1180	32645		2482	14940
176	0020	0972	32982		2545	14871
176	0030	0901	33111		2566	14848
176	0050	0773	33450		2612	14807
176	0075	0728	33702		2638	14797
176	0100	0709	33811		2649	14795

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	32420		2442	14977	0000	00000	3521
0010	1180	32645		2482	14940	0033	00002	3140
0020	0972	32982		2545	14871	0062	00006	2547
0030	0901	33111		2566	14848	0087	00012	2344
0050	0773	33450		2612	14807	0130	00029	1911
0075	0728	33702		2638	14797	0175	00058	1667
0100	0709	33811		2649	14795	0215	00094	1564

C-REF-NO 009	YR 1965	DEPTH 124	WAVES 1 2921	AIR T 12.7	VIS 6
CONS. NO 002	MONTH 9	MXSAMPD 01	WAVES 2 2732	WET B 11.6	STN 002
LAT 48-380N	DAY 18	NO.DPTH 7	WND-DIR 330	WW-CCDE 02	
LCN 126-000W	HR 01.7	W-COLOR	WND-SPD 02	CLD-TPE 7	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1019.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
017	000C	124 B	31440		2378	14944
017	0010	1078	31231		2391	14886
017	0020	0936	32295		2497	14849
017	0030	0928	32552		2518	14851
017	0050	0846	33086		2573	14830
017	0075	0769	33404		2609	14809
017	0100	0705	33783		2648	14793

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1240 B	31440		2378	14944	0000	00000	4133
0010	1078	31231		2391	14886	0041	00002	4011
0020	0936	32295		2497	14849	0076	00007	3001
0030	0928	32552		2518	14851	0105	00015	2799
0050	0846	33086		2573	14830	0156	00035	2285
0075	0769	33404		2609	14809	0210	00069	1944
0100	0705	33783		2648	14793	0254	00108	1579

C-REF-NO 009 YR 1965 DEPTH C 1300 WAVES 1 2921 AIR T 12.7 VIS 7
 CONS. NO 003 MONTH 9 MXSAMPD 12 WAVES 2 2933 WET B 11.6 STN 003
 LAT 48-420N DAY 18 NO.DPTH 19 WND-DIR 290 WW-CODE 02
 LON 126-400W HR 04.4 W-COLOR WND-SPD 01 CLD-TPE 8
 MARSD SQ 157 C/I 1802 W-TRNSP BARO 1020.0 CLD-AMT 2 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
044	0000	143 B	32303		2407	15018
044	0010	1432	32289		2405	15020
044	0020	1422	32289		2407	15019
044	0030	1117	32358		2471	14917
044	0050	0826	32564		2535	14816
044	0075	0741	32749		2561	14789
044	0100	0739	33232		2600	14799
044	0125	0741	33550		2624	14808
044	0150	0742	33754		2640	14815
044	0175	0717	33892		2654	14811
044	0200	0703	33938		2660	14811
044	0250	0668	33978		2668	14805
044	0300	0639 B	34003		2674	14802
044	0400	0526	33997		2687	14773
048	0500	0520	34121		2698	14789
048	0600	0478	34188		2708	14789
048	0800	0414	34289		2723	14797
048	1000	0355	34392		2737	14807
048	1200	0314	34466		2747	14824

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1430 B	32303		2407	15018	0000	00000	3857
0010	1432	32289		2405	15020	0039	00002	3874
0020	1422	32289		2407	15019	0078	00008	3857
0030	1117	32358		2471	14917	0113	00017	3247
0050	0826	32564		2535	14816	0173	00041	2644
0075	0741	32749		2561	14789	0236	00081	2394
0100	0739	33232		2600	14799	0292	00130	2035
0125	0741	33550		2624	14808	0340	00186	1805
0150	0742	33754		2640	14815	0384	00247	1658
0175	0717	33892		2654	14811	0424	00314	1526
0200	0703	33938		2660	14810	0462	00386	1476
0225	0686	33963		2664	14808	0498	00466	1438
0250	0668	33978		2668	14805	0534	00554	1407
0300	0639 B	34003		2674	14802	0604	00750	1358
0400	0526	33997		2687	14773	0735	01217	1233
0500	0520	34121		2698	14789	0855	01769	1145
0600	0478	34188		2708	14789	0966	02395	1055

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0700	0444	34241		2716	14792	1069	03082	0985
0800	0414	34289		2723	14797	1165	03825	0924
1000	0355	34392		2737	14807	1339	05422	0795
1200	0314	34466		2747	14824	1492	07137	0707

C-REF-NO 009 YR 1965 DEPTH C 2499 WAVES 1 3321 AIR T 12.2 VIS 7
 CONS. NO 004 MONTH 9 MXSAMPD 24 WAVES 2 2725 WET B 11.6 STN 004
 LAT 48-460N DAY 18 NO.DPTH 22 WND-DIR 330 WW-CODE 02
 LON 127-400W HR 09.0 W-COLOR WND-SPD 05 CLD-TPE 8
 MARSD SQ 157 C/I 18C2 W-TRNSP BARO 1020.0 CLD-AMT 1 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
090	0000	113 B	32395		2472	14917
090	0010	1157	32378		2466	14928
090	0020	1160	32379		2465	14931
090	0029	1160	32376		2465	14932
090	0049	1024 B	32769		2519	14892
090	0074	0752	33201		2595	14799
090	0098	0732	33560		2626	14800
090	0123	0726	33760		2643	14805
090	0148	0700	33857		2654	14800
090	0172	0679	33914		2661	14796
090	0197	0659	33935		2666	14793
090	0246	0599	33950		2675	14777
090	0296	0564	33979		2681	14771
090	0396	0526	34076		2693	14774
096	0500	0490	34124		2701	14777
096	0600	0455	34186		2710	14780
096	0800	0398	34314		2726	14791
096	1000	0354	34405		2738	14807
096	1200	0300	34450		2747	14818
096	1500	0252	34521		2757	14848
096	2000	0193	34600		2768	14909
096	2400	0177 B	34635		2772	14971

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	32395		2472	14917	0000	00000	3235
0010	1157	32378		2466	14928	0033	00002	3297
0020	1160	32379		2465	14931	0066	00007	3303
0030	1156	3239 B		2467	14931	0099	00015	3291
0050	1012 B	32787		2523	14888	0160	00040	2760
0075	0749	33218		2597	14798	0221	00077	2055
0100	0732	33581		2628	14801	0269	00120	1765
0125	0724	33770		2644	14804	0311	00169	1618
0150	0698	33863		2655	14799	0351	00225	1518
0175	0677	33918		2662	14796	0388	00287	1453
0200	0655	33936		2666	14792	0424	00356	1415
0225	0625	33945		2671	14784	0459	00433	1373
0250	0596	33952		2675	14776	0494	00516	1334
0300	0562	33983		2682	14771	0559	00701	1276

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0400	0525	34078		2694	14774	0683	01142	1171
0500	0490	34124		2701	14777	0798	01672	1107
0600	0455	34186		2710	14779	0906	02280	1029
0700	0425	34252		2719	14784	1006	02948	0954
0800	0398	34314		2726	14791	1099	03665	0886
1000	0354	34405		2738	14807	1268	05220	0784
1200	0300	34450		2747	14818	1419	06918	0703
1500	0252	34521		2757	14848	1619	09681	0613
2000	0193	34600		2768	14909	1904	14752	0508

C-REF-NO 009	YR 1965	DEPTH C 2929	WAVES 1 3522	AIR T 14.9	VIS 7
CONS. NO 005	MONTH 9	MXSAMPD 15	WAVES 2 3524	WET B 13.8	STN 006
LAT 49-020N	DAY 18	NO.DPTH 20	WND-DIR 350	WW-CCDE 01	
LON 130-400W	HR 21.4	W-COLOR	WND-SPD 10	CLD-TPE 8	
MARSD SQ 158	C/I 18C2	W-TRNSP	BARO 1024.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	000C	142 B	32553		2428	15018
214	001C	1446	32536		2421	15028
214	0019	1447	32536		2421	15030
214	0029	1444	32537		2422	15030
214	0048	1112	32655		2495	14922
214	0072	0787	32672		2549	14806
214	0096	0694	32725		2566	14774
214	0121	0644	32926		2588	14761
214	0145	0630	33336		2622	14765
214	0169	0622	33612		2645	14769
214	0193	0613	33740		2656	14771
214	0241	0571	33814		2667	14763
214	029C	0526	33880		2678	14754
214	039C	0456	33936		2690	14742
219	048C	0414	34047		2704	14741
219	0579	0396	34130		2712	14751
219	0779	0364	34277		2727	14772
219	0977	0320	34388		2740	14788
219	1175	0280	34450		2749	14805
219	1474	0240	34515		2757	14839

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1420 B	32553		2428	15018	0000	00000	3654
0010	1446	32536		2421	15028	0037	00002	3721
0020	1449	32535		2420	15031	0074	00008	3731
0030	1431 B	32542		2425	15026	0112	00017	3692
0050	1078	32659		2501	14910	0179	00044	2964
0075	0768 B	32674		2552	14799	0247	00087	2486
0100	0683	32744		2569	14771	0308	00141	2325
0125	0640	3299 C		2594	14761	0363	00205	2090
0150	0628	33405		2628	14766	0412	00273	1769
0175	0620	33654		2649	14770	0454	00343	1577
0200	0608	3376 B		2658	14770	0493	00417	1487
0225	0587	3380 C		2665	14767	0529	00497	1431
0250	0563	33827		2669	14761	0565	00583	1386
0300	0518	33886		2679	14752	0633	00774	1295
0400	0450	33948		2692	14741	0757	01220	1182
0500	0409	34066		2706	14742	0871	01739	1058

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0393	34147		2714	14753	0974	02321	0988
0700	0377	34223		2721	14764	1070	02964	0922
0800	0360	34291		2729	14774	1160	03658	0860
1000	0315	34397		2741	14790	1323	05151	0746
1200	0277	3447 B		2750	14808	1466	06763	0667
1500	0237	34517		2758	14842	1659	09425	0599

C-REF-NO 009 YR 1965 DEPTH C 3549 WAVES 1 3423 AIR T 14.4 VIS 6
 CONS. NO 006 MCNTH 9 MXSAMPD 04 WAVES 2 3424 WET B 14.4 STN 008
 LAT 49-170N DAY 19 NO.DPTH 14 WND-DIR 340 WW-CODE 53
 LON 134-400W HR 13.3 W-COLOR WND-SPD 10 CLD-TPE 7
 MARSD SQ 158 C/I 1802 W-TRNSP BARO 1029.0 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
133	0000	142 B	32481		2422	15017
133	0010	1452	32476		2415	15029
133	0020	1453	32477		2415	15031
133	0030	1452	32479		2415	15032
133	0050	0777	32616		2546	14798
133	0075	0686	32675		2563	14767
133	0100	0588	32721		2579	14732
133	0125	0529	32819		2594	14713
133	0150	0550	33304		2630	14733
133	0175	0543	33611		2655	14738
133	0200	0538	33729		2665	14742
133	0250	0490	33794		2675	14731
133	0300	0451	33856		2685	14724
133	0400	0416	33970		2697	14727

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1420 B	32481		2422	15017	0000	00000	3707
0010	1452	32476		2415	15029	0038	00002	3777
0020	1453	32477		2415	15031	0076	00008	3781
0030	1452	32479		2415	15032	0114	00018	3780
0050	0777	32616		2546	14797	0177	00042	3538
0075	0686	32675		2563	14767	0239	00082	2377
0100	0588	32721		2579	14732	0297	00133	2225
0125	0529	32819		2594	14713	0351	00196	2087
0150	0550	33304		2630	14733	0399	00263	1751
0175	0543	33611		2655	14738	0441	00331	1516
0200	0538	33729		2665	14742	0478	00403	1425
0225	0517 B	3378 C		2671	14738	0513	00479	1368
0250	0490	33794		2675	14731	0547	00562	1327
0300	0451	33856		2685	14724	0612	00744	1242
0400	0416	33970		2697	14727	0731	01171	1128

C-REF-NO 009	YR 1965	DEPTH C 3774	WAVES 1 3322	AIR T 13.3	VIS 5
CONS. NO 007	MONTH 9	MXSAMPD 35	WAVES 2 3323	WET B 13.3	STN 009
LAT 49-260N	DAY 19	NO.DPTH 24	WNO-DIR 330	WW-CODE 44	
LON 136-400W	HR 19.8	W-COLOR 20	WNO-SPC 08	CLD-TPE 8	
MARSC SQ 158	C/I 18C2	W-TRNSP 10	BARO 1032.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	145 B	32260		2399	15024
198	0010	1459	32254		2397	15029
198	0020	1453	32252		2398	15028
198	0030	1345	32293		2423	14995
198	0050	0760	32667		2552	14792
198	0075	0668	32682		2566	14760
198	0100	0580	32760		2583	14729
198	0125	0548	32971		2604	14723
198	0150	0545	33425		2640	14732
198	0175	0538	33661		2659	14737
198	0200	0540	33786		2669	14743
198	0250	0505	33866		2679	14738
198	0300	0454	33895		2687	14726
198	0400	0412	33984		2699	14726
198	0500	0398 B	34081		2708	14738
198	0600	0382 B	34174		2717	14749
205	0800	0342	34294		2730	14767
205	1000	0300	34379		2741	14783
205	1200	0269	34440		2749	14804
205	1500	0230	34510		2758	14839
205	2000	0192	34590		2767	14908
205	2500	0170 B	34630		2772	14985
205	3000	0158	34658		2775	15066
205	3500	0155 B	34668		2776	15152

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1450 B	32260		2399	15024	0000	00000	3929
0010	1459	32254		2397	15029	0040	00002	3954
0020	1453	32252		2398	15028	0079	00008	3946
0030	1345	32293		2423	14995	0118	00018	3706
0050	0760	32667		2552	14792	0180	00042	2477
0075	0668	32682		2566	14760	0241	00081	2349
0100	0580	32760		2583	14729	0298	00132	2187
0125	0548	32971		2604	14723	0350	00192	1995
0150	0545	33425		2640	14732	0396	00256	1654
0175	0538	33661		2659	14737	0436	00322	1473
0200	0540	33786		2669	14743	0472	00391	1384
0225	0527	3384 C		2675	14743	0506	00465	1329

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0250	0505	33866		2679	14738	0539	00546	1290
0300	0454	33895		2687	14726	0602	00724	1216
0400	0412	33984		2699	14726	0720	01143	1113
0500	0398 B	34081		2708	14738	0828	01643	1034
0600	0382 B	34174		2717	14749	0928	02209	0956
0700	0363 B	34242		2724	14758	1022	02831	0892
0800	0342	34294		2730	14767	1109	03505	0838
1000	0300	34379		2741	14783	1269	04976	0743
1200	0269	34440		2749	14804	1413	06596	0676
1500	0230	34510		2758	14839	1606	09267	0596
2000	0192	34590		2767	14908	1888	14303	0514
2500	0170 B	34630		2772	14985	2140	20132	0476
3000	0158	34658		2775	15066	2378	26870	0455
3500	0155 B	34668		2776	15152	2611	34727	0458

C-REF-NO 009	YR 1965	DEPTH C 3889	WAVES 1 3012	AIR T 13.8	VIS 2
CONS. NO 008	MONTH 9	MXSAMPD 04	WAVES 2 3221	WET B 13.3	STN 010
LAT 49-340N	DAY 20	NO.DPTH 14	WNC-DIR 300	WW-CCDE 42	
LON 138-400W	HR 04.0	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1032.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
040	0000	146 B	32472		2413	15030
040	0010	1451	32459		2414	15029
040	0020	1307	32487		2446	14983
040	0030	0872	32632		2533	14831
040	0050	0676	32697		2566	14759
040	0074	0618	32720		2575	14740
040	0099	0557	32743		2585	14720
040	0124	0513	32986		2609	14709
040	0149	0512	33324		2636	14717
040	0174	0478	33569		2659	14711
040	0199	0446	33679		2671	14703
040	0248	0395	33757		2683	14690
040	0298	0392 B	33834		2689	14699
040	0398	0381	33955		2700	14712

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1460 B	32472		2413	15030	0000	00000	3793
0010	1451	32459		2414	15029	0038	00002	3787
0020	1307	32487		2446	14983	0075	00007	3490
0030	0872	32632		2533	14831	0106	00015	2657
0050	0676	32697		2566	14759	0156	00035	2345
0075	0615	32719		2576	14739	0214	00072	2257
0100	0555	32750		2585	14719	0269	00122	2165
0125	0513	33000		2610	14709	0321	00181	1934
0150	0511	33336		2637	14717	0367	00245	1682
0175	0477	33575		2659	14710	0406	00311	1468
0200	0445	33682		2671	14702	0442	00379	1356
0225	0415	3373 C		2679	14695	0475	00452	1290
0250	0394	33760		2683	14691	0507	00530	1250
0300	0379 D	33835		2690	14693	0569	00703	1182
0400	0382	33957		2700	14713	0684	01115	1101

C-REF-NO 009	YR 1965	DEPTH C 3880	WAVES 1 2921	AIR T 13.8	VIS 2
CONS. NO 009	MCNTH 9	MXSAMPD 15	WAVES 2 2921	WET B 13.8	STN 011
LAT 49-410N	DAY 20	NO. DPTH 20	WND-DIR 290	WW-CODE 47	
LCN 140-400W	HR 10.9	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1032.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
109	0000	147 B	32473		2411	15033
109	0010	1463	32467		2412	15033
109	0020	1424	32468		2420	15022
109	0030	1338	32494		2440	14995
109	0050	0872	32643		2534	14834
109	0075	0646	32705		2571	14751
109	0100	0576	32719		2580	14727
109	0125	0519	32899		2601	14710
109	0150	0531	33260		2628	14724
109	0175	0506	33543		2654	14722
109	0200	0470	33667		2668	14713
109	0250	0415	33731		2678	14699
109	0300	0391	33811		2687	14698
109	0400	0372	33934		2699	14708
114	0500	0375	34076		2710	14728
114	0600	0364	34162		2718	14741
114	0800	0330	34295		2732	14762
114	1000	0295	34377		2741	14781
114	1200	0265 B	34441		2749	14802
114	1500	0234	34508		2757	14840

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1470 B	32473		2411	15033	0000	00000	3813
0010	1463	32467		2412	15033	0038	00002	3806
0020	1424	32468		2420	15022	0076	00008	3730
0030	1338	32494		2440	14995	0113	00017	3546
0050	0872	32643		2534	14834	0175	00042	2652
0075	0646	32705		2571	14751	0237	00081	2304
0100	0576	32719		2580	14727	0294	00132	2213
0125	0519	32899		2601	14710	0347	00193	2016
0150	0531	33260		2628	14724	0395	00260	1762
0175	0506	33543		2654	14722	0436	00328	1524
0200	0470	33667		2668	14713	0473	00399	1394
0225	0439	3371 D		2675	14705	0507	00474	1329
0250	0415	33731		2678	14699	0541	00554	1293
0300	0391	33811		2687	14698	0604	00732	1212
0400	0372	33934		2699	14708	0721	01150	1108
0500	0375	34076		2710	14728	0828	01643	1013

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0364	34162		2718	14741	0927	02200	0945
0700	0348	34235		2725	14752	1019	02815	0881
0800	0330	34295		2732	14762	1105	03479	0824
1000	0295	34377		2741	14781	1264	04935	0739
1200	0265 B	34441		2749	14802	1406	06544	0670
1500	0234	34508		2757	14840	1600	09220	0602

C-REF-NO 009	YR 1965	DEPTH C 3909	WAVES 1 2421	AIR T 13.8	VIS 3
CONS. NO 010	MONTH 9	MXSAMPD 04	WAVES 2 2431	WET B 13.8	STN 012
LAT 49-490N	DAY 20	NO.DPTH 14	WNO-DIR 240	WW-CODE 44	
LON 142-400W	HR 19.6	W-COLOR 10	WNO-SPD 04	CLD-TPE 8	
MARSD SQ 159	C/I 1802	W-TRNSP 13	BARO 1032.0	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	147 B	32493		2413	15034
196	0010	1457	32491		2415	15031
196	0020	1410	32485		2425	15017
196	0030	1368	32489		2434	15005
196	0050	0858	32635		2535	14829
196	0075	0592	32696		2577	14729
196	0100	0533	32726		2586	14710
196	0125	0489	32799		2597	14697
196	0150	0482	33035		2616	14701
196	0175	0468	33490		2654	14705
196	0200	0439	33657		2670	14700
196	0250	0380	33738		2683	14684
196	0300	0373	33826		2690	14691
196	0400	0356	33961		2703	14702

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1470 B	32493		2413	15034	0000	00000	3798
0010	1457	32491		2415	15031	0038	00002	3776
0020	1410	32485		2425	15017	0076	00008	3689
0030	1368	32489		2434	15005	0112	00017	3607
0050	0858	32635		2535	14829	0175	00042	2637
0075	0592	32696		2577	14729	0236	00081	2246
0100	0533	32726		2586	14710	0292	00130	2159
0125	0489	32799		2597	14697	0345	00191	2058
0150	0482	33035		2616	14701	0394	00261	1876
0175	0468	33490		2654	14705	0437	00332	1522
0200	0439	33657		2670	14700	0474	00401	1369
0225	0406	3372 E		2678	14691	0507	00474	1291
0250	0380	33738		2683	14684	0539	00552	1252
0300	0373	33826		2690	14691	0601	00725	1182
0400	0356	33961		2703	14702	0714	01131	1072

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 2321	AIR T 13.8	VIS 1
CONS. NO 011	MCNTH 9	MXSAMPD 15		WAVES 2 2321	WET B 13.8	STN ON
LAT 50-000N	DAY 21	NC.DPTH 20		WND-DIR 230	WW-CCDE 44	
LGN 143-540W	HR 02.9	W-COLOR		WND-SPD 04	CLD-TPE 8	
MARSD SQ 195	C/I 18C2	W-TRNSP		BARO 1031.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
029	000C	148 B	32460		2408	15036
029	001C	1465	32457		2411	15033
029	0020	1441	32458		2416	15027
029	003C	1356	32486		2436	15001
029	005C	0693	32702		2564	14766
029	0075	0597	32691		2576	14731
029	010C	0546	32720		2584	14715
029	0125	049C	32826		2599	14698
029	015C	0457	33221		2634	14693
029	0175	0453	33525		2658	14700
029	020C	0448	33705		2673	14704
029	025C	0395	33756		2682	14691
029	030C	0358	33811		2691	14684
029	040C	0367	33975		2703	14707
034	050C	0377	34097		2711	14729
034	060C	0357	34169		2719	14738
034	080C	0326	34291		2732	14760
034	100C	0294	34374		2741	14781
034	120C	0268	34436		2749	14804
034	150C	0231	34508		2757	14839

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	148C B	32460		2408	15036	0000	00000	3843
0010	1465	32457		2411	15033	0038	00002	3817
0020	1441	32458		2416	15027	0077	00008	3771
0030	1356	32486		2436	15001	0114	00017	3586
0050	0693	32702		2564	14766	0173	00040	2362
0075	0597	32691		2576	14731	0231	00078	2256
0100	0546	32720		2584	14715	0287	00127	2178
0125	0490	32826		2599	14697	0340	00188	2039
0150	0457	33221		2634	14693	0388	00255	1710
0175	0453	33525		2658	14700	0428	00321	1480
0200	0448	33705		2673	14704	0463	00389	1342
0225	0424 B	3376 F		2679	14699	0496	00461	1281
0250	0395	33756		2682	14691	0528	00539	1253
0300	0358	33811		2691	14684	0590	00712	1179
0400	0367	33975		2703	14707	0703	01117	1072
0500	0377	34097		2711	14729	0808	01599	1000

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0600	0357	34169		2719	14738	0905	02149	0932
0700	0341	34234		2726	14749	0997	02758	0874
0800	0326	34291		2732	14760	1083	03418	0823
1000	0294	34374		2741	14781	1241	04874	0740
1200	0268	34436		2749	14804	1384	06494	0677
1500	0231	34508		2757	14839	1578	09175	0598

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 1821	AIR T 12.7	VIS 3
CONS. NO 012	MONTH 9	MXSAMPD	15	WAVES 2 2331	WET B 12.7	STN GN
LAT 50-420N	DAY 21	NO.DPTH	20	WND-DIR 180	WW-CODE 44	
LON 143-520W	HR 09.6	W-COLOR		WND-SPD 04	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP		BARO 1032.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
096	0000	140 B	32483		2427	15011
096	0010	1403	32474		2425	15013
096	0020	1394	32470		2427	15012
096	0030	1002	32588		2509	14879
096	0049	0733	32685		2557	14781
096	0074	0619	32697		2573	14740
096	0099	0562	32726		2583	14721
096	0124	0501	32834		2598	14702
096	0148	0458	33152		2628	14692
096	0173	0389	33481		2661	14672
096	0198	0357	33609		2675	14664
096	0247	0341	33746		2687	14667
096	0297	0350	33855		2695	14681
096	0397	0350	34002		2706	14699
102	0500	0354	34086		2713	14719
102	0600	0344	34177		2721	14733
102	0800	0319	34306		2734	14757
102	1000	0292	34377		2742	14780
102	1200	0264	34436		2749	14802
102	1500	0231	34508		2757	14839

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1400 B	32483		2427	15011	0000	00000	3666
0010	1403	32474		2425	15013	0037	00002	3681
0020	1394	32470		2427	15012	0074	00008	3669
0030	1002	32588		2509	14879	0107	00016	2888
0050	0725	32687		2559	14778	0160	00037	2416
0075	0616	32697		2574	14739	0219	00075	2274
0100	0559	32727		2583	14721	0275	00125	2188
0125	0499	32845		2599	14702	0328	00186	2035
0150	0452	33182		2631	14691	0376	00253	1734
0175	0385	33496		2663	14671	0416	00319	1433
0200	0356	33616		2675	14664	0450	00385	1315
0225	0343	3370 B		2683	14664	0483	00455	1245
0250	0341	33753		2688	14668	0514	00530	1202
0300	0350	33861		2695	14681	0572	00696	1134
0400	0350	34005		2707	14700	0682	01087	1033
0500	0354	34086		2713	14719	0784	01556	0984

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0344	34177		2721	14733	0879	02096	0913
0700	0332	34250		2728	14745	0969	02691	0853
0800	0319	34306		2734	14757	1053	03336	0804
1000	0292	34377		2742	14780	1208	04772	0736
1200	0264	34436		2749	14802	1351	06382	0673
1500	0231	34508		2757	14839	1544	09054	0598

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 1922	AIR T 13.3	VIS 1
CONS. NO 013	MONTH 9	MXSAMPD 15		WAVES 2 2022	WET B 13.3	STN GS
LAT 50-420N	DAY 21	NO.DPTH 20		WNC-DIR 180	WW-CCDE 45	
LCN 145-000W	HR 17.6	W-COLOR 30		WND-SPD 05	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP 11		BARO 1031.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
176	000C	138 B	32455		2429	15004
176	001C	1371 B	32452		2430	15002
176	0020	1373	32450		2430	15005
176	003C	1348	32452		2435	14998
176	005C	0936	32627		2523	14858
176	0075	0662	32720		2570	14758
176	0100	0574	32742		2582	14727
176	0125	0476	32761		2595	14691
176	015C	0459	33211		2633	14694
176	0175	0382	33505		2664	14670
176	0200	0352	33609		2675	14662
176	0250	0330	33737		2687	14663
176	030C	0350	33862		2695	14681
176	0400	0353	34005		2706	14701
181	0489	0353	34087		2713	14717
181	0589	0340	34181		2722	14729
181	0788	0320	34300		2733	14755
181	0987	0289	34376		2742	14776
181	1178	0262	34444		2750	14798
181	1479	0231	34511		2758	14836

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1380 B	32455		2429	15004	0000	00000	3648
0010	1371 B	32452		2430	15002	0037	00002	3635
0020	1373	32450		2430	15005	0073	00007	3643
0030	1348	32452		2435	14998	0110	00017	3595
0050	0936	32627		2523	14858	0173	00042	2760
0075	0662	32720		2570	14758	0237	00082	2313
0100	0574	32742		2582	14727	0294	00133	2193
0125	0476	32761		2595	14691	0348	00195	2073
0150	0459	33211		2633	14694	0395	00261	1720
0175	0382	33505		2664	14670	0435	00327	1423
0200	0352	33609		2675	14662	0470	00393	1317
0225	0335	3368 B		2682	14660	0502	00464	1250
0250	0330	33737		2687	14663	0533	00539	1204
0300	0350	33862		2695	14681	0592	00705	1133
0400	0353	34005		2706	14701	0701	01096	1036
0500	0352	34098		2714	14718	0803	01563	0973

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0339	34189		2722	14731	0897	02095	0898
0700	0329	34256		2729	14744	0985	02683	0846
0800	0318	34305		2734	14757	1069	03325	0804
1000	0287	34381		2742	14778	1224	04752	0727
1200	0260	34447		2750	14800	1364	06337	0660
1500	0229	34515		2758	14838	1555	08970	0591

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 1722	AIR T 13.3	VIS 2
CONS. NO 014	MONTH 9	MXSAMPD	15	WAVES 2 1823	WET B 13.3	STN GG
LAT 50-370N	DAY 22	NO.DPTH	20	WND-DIR 170	WW-CODE 44	
LOX 146-030W	HR 00.6	W-COLOR		WND-SPD 07	CLD-TPE	
MARSC SQ 195	C/I 18C2	W-TRNSP		BARO 1030.0	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
006	0000	139 B	32479		2428	15007
006	0010	1350 B	32479		2436	14996
006	0020	1281	32487		2451	14974
006	0030	1216	32505		2464	14954
006	0050	0707	32648		2558	14771
006	0075	0535	32698		2584	14706
006	0100	0486	32746		2593	14691
006	0125	0438	32822		2604	14676
006	0150	0375	33208		2641	14658
006	0175	0325	33548		2673	14646
006	0200	0311	33678		2684	14646
006	0250	0327	33810		2693	14663
006	0300	0338	33911		2700	14677
006	0400	0348	34041		2710	14699
013	0493	0349	34130		2717	14716
013	0593	0338	34219		2725	14730
013	0793	0310	34316		2735	14752
013	0991	0283	34393		2744	14775
013	1188	0260	34447		2750	14798
013	1485	0230	34516		2758	14836

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT-EN	SVA
0000	1390 B	32479		2428	15007	0000	00000	3649
0010	1350 B	32479		2436	14996	0036	00002	3575
0020	1281	32487		2451	14974	0072	00007	3441
0030	1216	32505		2464	14954	0105	00016	3311
0050	0707	32648		2558	14771	0163	00039	2421
0075	0535	32698		2584	14706	0221	00075	2179
0100	0486	32746		2593	14691	0275	00123	2093
0125	0438	32822		2604	14676	0326	00182	1988
0150	0375	33208		2641	14658	0372	00246	1637
0175	0325	33548		2673	14646	0409	00308	1336
0200	0311	33678		2684	14646	0442	00370	1227
0225	0316 B	3376 B		2690	14653	0472	00436	1174
0250	0327	33810		2693	14663	0501	00507	1146
0300	0338	33911		2700	14677	0557	00666	1084
0400	0348	34041		2710	14699	0663	01043	1004
0500	0348	34137		2717	14717	0761	01495	0940

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0337	34223		2725	14730	0852	02010	0871
0700	0323	3428 B		2731	14742	0938	02581	0822
0800	0309	34319		2736	14753	1019	03206	0784
1000	0282	34396		2744	14776	1170	04600	0711
1200	0258	34454		2751	14800	1309	06159	0654
1500	0229	34519		2758	14838	1498	08771	0588

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 1723	AIR T 13.8	VIS 6
CONS. NO 015	MONTH 9	MXSAMPD 15		WAVES 2 1734	WET B 13.3	STN OG
LAT 50-000N	DAY 22	NO.DPTH 20		WND-DIR 170	WW-CODE 03	
LCN 146-050W	HR 06.7	W-COLOR		WND-SPD 10	CLD-TPE 7	
MARSD SQ 195	C/I 1802	W-TRNSP		BARO 1028.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
067	0000	140 B	32447		2424	15010
067	0010	1390	32447		2426	15009
067	0020	1392	32447		2425	15011
067	0030	1139	32518		2480	14927
067	0050	0836	32661		2541	14821
067	0075	0599	32732		2579	14733
067	0100	0520	32759		2590	14705
067	0125	0471	32934		2609	14691
067	0150	0414	33493		2660	14679
067	0175	0361	33621		2675	14662
067	0200	0337	33662		2681	14657
067	0250	0322	33844		2697	14661
067	0300	0331	33853		2696	14673
067	0400	0349	34017		2708	14700
074	0495	0355	34116		2715	14719
074	0595	0340 B	34196		2723	14730
074	0795	0311	34311		2735	14753
074	0990	0288	34391		2743	14777
074	1183	0261	34442		2750	14798
074	1480	0234	34506		2757	14837

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SWA
0000	1400 B	32447		2424	15010	0000	00000	3693
0010	1390	32447		2426	15009	0037	00002	3675
0020	1392	32447		2425	15011	0074	00008	3682
0030	1139	32518		2480	14927	0108	00016	3166
0050	0836	32661		2541	14821	0166	00039	2587
0075	0599	32732		2579	14733	0227	00078	2227
0100	0520	32759		2590	14705	0282	00126	2120
0125	0471	32934		2609	14691	0333	00185	1938
0150	0414	33493		2660	14679	0375	00245	1462
0175	0361	33621		2675	14662	0410	00303	1315
0200	0337	33662		2681	14657	0443	00365	1263
0225	0325	3376 D		2689	14657	0474	00432	1184
0250	0322	33844		2697	14661	0503	00503	1116
0300	0331	33853		2696	14673	0559	00662	1121
0400	0349	34017		2708	14700	0667	01049	1023
0500	0355	34120		2715	14720	0767	01510	0958

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0339 B	34199		2723	14731	0861	02036	0891
0700	0324	34262		2730	14742	0948	02618	0836
0800	0310	34313		2735	14753	1030	03251	0790
1000	0287	34394		2744	14778	1183	04655	0717
1200	0262	34451		2750	14801	1322	06228	0659
1500	0232	34509		2757	14840	1514	08878	0599

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 1723	AIR T 15.5	VIS 7
CONS. NO 016	MCNTH 9	MXSAMPD 15		WAVES 2 1734	WET B 14.9	STN NG
LAT 49-180N	DAY 22	NO.DPTH 20		WND-DIR 170	WW-CODE 02	
LCN 146-050W	HR 21.6	W-COLOR		WND-SPD 10	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP		BARO 1026.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND
216	0000	147 B	32516		2414	15034
216	0009	1444	32514		2420	15027
216	0018	1444	32512		2420	15028
216	0027	1435	32512		2421	15028
216	0045	0910	32680		2531	14848
216	0068	0719	32755		2565	14780
216	0090	0609	32722		2577	14739
216	0113	0562	32765		2586	14724
216	0136	0520	33068		2615	14715
216	0158	0494	33498		2651	14714
216	0181	0455	33620		2665	14703
216	0226	0400	33701		2678	14688
216	0273	0370	33744		2684	14684
216	0370	0362	33885		2696	14698
220	0486	0366	34067		2710	14722
220	0586	0355	34167		2719	14735
220	0786	0326	34302		2733	14758
220	0987	0294	34377		2742	14778
220	1190	0264	34439		2749	14800
220	1496	0232	34505		2757	14839

I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1470 B	32516		2414	15034	0000	00000	3781
0010	1443	32514		2420	15027	0038	00002	3732
0020	1451 C	32509		2418	15031	0075	00008	3752
0030	1363 I	3254 C		2438	15004	0112	00017	3564
0050	0842 G	32708		2544	14824	0174	00041	2560
0075	0677	3275 B		2570	14764	0235	00080	2312
0100	0584 B	3272 C		2579	14730	0292	00131	2222
0125	0539	3290 B		2599	14719	0346	00193	2039
0150	0503	3335 F		2639	14714	0392	00258	1662
0175	0465	3361 C		2663	14706	0431	00322	1432
0200	0428	3367 B		2672	14695	0466	00390	1348
0225	0401	33701		2677	14688	0500	00462	1299
0250	0382	33725		2681	14685	0532	00541	1264
0300	0364	33779		2687	14686	0594	00717	1208
0400	0363	33935		2700	14704	0711	01132	1099
0500	0365	34083		2711	14724	0816	01619	0997

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0353	34179		2720	14737	0913	02165	0921
0700	0339	34253		2727	14748	1003	02764	0858
0800	0324	34308		2733	14759	1088	03412	0808
1000	0292	34381		2742	14780	1243	04848	0732
1200	0264	34442		2749	14802	1385	06448	0669
1500	0232	34506		2757	14839	1578	09118	0601

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 1523	AIR T 16.6	VIS 6
CCNS. NO 017	MONTH 9	MXSAMPD 14		WAVES 2 1634	WET B 14.4	STN NS
LAT 49-180N	DAY 23	NO.DPTH 20		WNC-DIR 150	WW-CCDE 02	
LCN 145-000W	HR 07.4	W-COLOR		WND-SPD 10	CLD-TPE 7	
MARSD SQ 159	C/I 18C2	W-TRNSP		BARO 1026.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
074	0000	148 B	32493		2411	15037
074	0010	1472	32486		2412	15036
074	0020	1473	32488		2412	15038
074	0029	1421	32486		2422	15022
074	0049	0776	32688		2552	14798
074	0073	0662	32702		2568	14757
074	0098	0621	32754		2578	14746
074	0122	0546	32831		2593	14720
074	0147	0500	33088		2618	14709
074	0171	0428	33497		2659	14688
074	0195	0400	33633		2672	14682
074	0244	0372	33754		2685	14680
074	0293	0365	33821		2691	14686
074	0393	0362	33970		2703	14703
080	0484	0360	34067		2711	14719
080	0579	0348	34154		2719	14731
084	0759	0328	34262		2729	14753
090	0952	0300	34360		2740	14775
090	1151	0273	34422		2747	14797
090	1446	0236	34502		2757	14832

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1480 B	32493		2411	15037	0000	00000	3819
0010	1472	32486		2412	15036	0038	00002	3810
0020	1473	32488		2412	15038	0077	00008	3813
0030	1391 E	3250 B		2429	15013	0114	00017	3648
0050	0763 B	32691		2554	14793	0176	00041	2463
0075	0658	32705		2569	14756	0236	00080	2319
0100	0615	32757		2579	14743	0293	00131	2231
0125	0540	32853		2595	14719	0347	00193	2075
0150	0491	3314 C		2624	14706	0396	00262	1805
0175	0421	3353 B		2662	14687	0437	00329	1443
0200	0396	33651		2674	14681	0472	00396	1328
0225	0379	3372 B		2681	14680	0504	00467	1260
0250	0370	33764		2686	14681	0536	00544	1223
0300	0365	33832		2692	14687	0596	00714	1170
0400	0362	33978		2703	14705	0709	01116	1065
0500	0358	34083		2712	14721	0813	01594	0990

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0346	34169		2720	14733	0909	02138	0921
0700	0335	34232		2726	14746	1000	02741	0869
0800	0322	34285		2732	14758	1085	03400	0823
1000	0293	34377		2742	14780	1243	04853	0737
1200	0267	3444 B		2749	14803	1386	06460	0670

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 1822	AIR T 16.6	VIS 7
CONS. NO 018	MCNTH 9	MXSAMPD 15		WAVES 2 1955	WET B 14.9	STN NN
LAT 49-180N	DAY 23	NC.DPTH 20		WNC-DIR 180	WW-CCDE 02	
LON 143-550W	HR 17.6	W-COLOR		WND-SPD 09	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP		BARO 1027.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
176	0000	150 B	32481		2405	15043
176	0010	1492	32475		2407	15042
176	0020	1492	32474		2407	15044
176	0029	1410	32479		2424	15019
176	0049	0742	32672		2555	14784
176	0074	0629	32693		2572	14744
176	0098	0578	32700		2579	14728
176	0123	0511	32751		2590	14705
176	0148	0478	33120		2623	14700
176	0172	0468	33420		2648	14704
176	0197	0431	33650		2670	14696
176	0246	0381	33738		2682	14684
176	0296	0376	33818		2689	14691
176	0396	0363	33937		2700	14704
180	0488	0362 B	34047		2709	14720
180	0587	0356	34140		2717	14735
180	0785	0328	34289		2731	14758
180	0983	0296	34373		2741	14779
180	1182	0269	34432		2748	14801
180	1480	0234	34500		2757	14837

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1500 B	32481		2405	15043	0000	00000	3868
0010	1492	32475		2407	15042	0039	00002	3859
0020	1492	32474		2407	15044	0078	00008	3862
0030	1378 E	32488		2431	15008	0115	00018	3628
0050	0729 C	32675		2557	14780	0176	00041	2429
0075	0626	32693		2572	14743	0236	00079	2289
0100	0572	32697		2579	14725	0292	00130	2225
0125	0507	3278 B		2593	14704	0347	00192	2095
0150	0477	33147		2626	14701	0396	00261	1787
0175	0464	33453		2651	14703	0438	00330	1546
0200	0427	3366 B		2672	14695	0474	00400	1352
0225	0398	3373 F		2680	14688	0507	00472	1273
0250	0380	33745		2683	14684	0539	00550	1246
0300	0375	33823		2690	14692	0600	00723	1187
0400	0363	33942		2700	14704	0715	01134	1093
0500	0362 B	34059		2710	14722	0822	01623	1011

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0355	34152		2718	14737	0920	02179	0943
0700	0342	34232		2726	14749	1012	02792	0876
0800	0326	34297		2732	14760	1098	03451	0818
1000	0294	34379		2742	14780	1255	04899	0736
1200	0266	34440		2749	14803	1398	06508	0672
1500	0232	34503		2757	14840	1592	09190	0603

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 0821	AIR T 13.3	VIS 7
CCNS. NO 019	MONTH 9	MXSAMPD 42	WAVES 2 2744	WET B 12.2	STN 401
LAT 49-570N	DAY 24	NO.DPTH 26	WND-DIR 080	WW-CCDE 02	
LON 145-060W	HR 19.1	W-COLOR 30	WND-SPD 03	CLD-TPE 3	
MARSC SQ 159	C/I 1802	W-TRNSP 13	BARO 1031.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	143 B	32493	609 B	2421	15021
191	0010	1423	32483	611 B	2422	15020
191	0020	1424	32484	614 B	2422	15022
191	0030	1419	32482	615 B	2423	15022
191	0050	0868	32655	685 B	2536	14833
191	0075	0642	32715	674 B	2572	14750
191	0100	0588	32742	678 B	2581	14732
191	0125	0520	32804	674 B	2594	14710
191	0150	0471	33159	596 B	2627	14698
191	0175	0407	33429	495 B	2655	14679
191	0200	0372	33598	406 B	2672	14671
191	0250	0354	33723	291 B	2684	14673
191	0300	0340	33784	217 B	2690	14676
191	0400	0358	33966	132 B	2703	14703
191	0500	0353	34083	2079 B	2713	14719
191	0600	0346	34175	075 B	2721	14734
202	0800	0324	34313	058 B	2734	14759
202	1000	0291	34385	048 B	2742	14779
202	1200	0266	34443	054 B	2749	14803
202	1500	0231	34514	070 B	2758	14839
202	2000	0194	34590	128 B	2767	14909
202	2500	0173	34630	199	2772	14986
202	3000	0158 B	34661	262	2775	15066
202	3500	0152	34675	306	2777	15151
202	4000	0150 B	34681	322	2778	15238
202	4200	0153	34688	328	2778	15275

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PCT.EN	SVA
0000	1430 B	32493	609 B	2421	15021	0000	00000	3718
0010	1423	32483	611 B	2422	15020	0037	00002	3714
0020	1424	32484	614 B	2422	15022	0075	00008	3718
0030	1419	32482	615 B	2423	15022	0112	00017	3712
0050	0868	32655	685 B	2536	14833	0176	00042	2637
0075	0642	32715	674 B	2572	14750	0238	00081	2292
0100	0588	32742	678 B	2581	14732	0295	00132	2210
0125	0520	32804	674 B	2594	14710	0349	00194	2088
0150	0471	33159	596 B	2627	14698	0397	00262	1771
0175	0407	33429	495 B	2655	14679	0438	00331	1505

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0372	33598	406 B	2672	14671	0474	00400	1345
0225	0358 B	3368 C	341 B	2680	14670	0507	00471	1270
0250	0354	33723	291 B	2684	14673	0539	00548	1237
0300	0340	33784	217 B	2690	14676	0600	00720	1181
0400	0358	33966	132 B	2703	14703	0714	01126	1070
0500	0353	34083	079 B	2713	14719	0817	01603	0985
0600	0346	34175	075 B	2721	14734	0913	02144	0916
0700	0336	34252	067 B	2728	14747	1003	02741	0856
0800	0324	34313	058 B	2734	14759	1087	03387	0805
1000	0291	34385	048 B	2742	14779	1242	04816	0729
1200	0266	34443	054 B	2749	14803	1384	06415	0670
1500	0231	34514	070 B	2758	14839	1576	09071	0594
2000	0194	34590	128 B	2767	14909	1858	14112	0517
2500	0173	34630	199	2772	14986	2112	19980	0479
3000	0158 B	34661	262	2775	15066	2350	26727	0453
3500	0152	34675	306	2777	15151	2580	34480	0449
4000	0150 B	34681	322	2778	15238	2812	43483	0455

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 2922	AIR T 13.3	VIS 7
CCNS. NO 020	MCNTH 9	MXSAMPD 05	WAVES 2 2733	WET B 09.9	STN 402
LAT 50-000N	DAY 27	NO.DPTH 16	WND-DIR 290	WW-CODE 02	
LCN 144-570W	HR 19.5	W-COLOR 40	WNU-SPD 04	CLD-TPE 4	
MARSD SQ 195	C/I 1802	W-TRNSP 14	BARO 1024.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
195	0000	144 B	32497	595 B	2419	15024
195	0003	1429	32492	611 B	2421	15021
195	0010	1427	32492	615 B	2422	15021
195	0020	1425	32492	616	2422	15022
195	0030	1421	32491	612 B	2423	15023
195	0050	0807	32656	690 B	2545	14810
195	0075	0624	32709	686 B	2574	14742
195	0100	0576	32718	690 B	2580	14727
195	0125	0531	32760	680 B	2589	14714
195	0150	0481	33066	618 B	2619	14701
195	0175	0411	33447	494 B	2656	14681
195	0200	0383	33637	397 B	2674	14676
195	0250	0338 B	33709	292	2684	14666
195	0300	0342	33805	213 B	2692	14677
195	0400	0358	33960	141 B	2702	14703
195	0500	0352	34065	086 B	2711	14718

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1440 B	32497	595 B	2419	15024	0000	00000	3735
0010	1427	32492	615 B	2422	15021	0037	00002	3715
0020	1425	32492	616	2422	15022	0075	00008	3714
0030	1421	32491	612 B	2423	15023	0112	00017	3709
0050	0807	32656	690 B	2545	14810	0175	00042	2549
0075	0624	32709	686 B	2574	14742	0236	00080	2274
0100	0576	32718	690 B	2580	14727	0292	00131	2214
0125	0531	32760	680 B	2589	14713	0347	00194	2133
0150	0481	33066	618 B	2619	14701	0397	00264	1852
0175	0411	33447	494 B	2656	14681	0439	00334	1495
0200	0383	33637	397 B	2674	14676	0475	00402	1327
0225	0357	3370 F	335 B	2682	14670	0507	00473	1257
0250	0338 B	33709	292	2684	14666	0539	00549	1232
0300	0342	33805	213 B	2692	14677	0599	00720	1168
0400	0358	33960	141 B	2702	14703	0712	01124	1075
0500	0352	34065	086 B	2711	14718	0817	01606	0997

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 3221	AIR T 13.8	VIS 7
CONS. NO 021	MONTH 9	MXSAMPD 20	WAVES 2 3633	WET B 11.6	STN 403
LAT 50-000N	DAY 29	NO.DPTH 21	WND-DIR 320	WW-CCDE 02	
LCN 145-000W	HR 19.1	W-COLOR 40	WND-SPD 03	CLD-TPE 8	
MARSD SQ 195	C/I 1802	W-TRNSP 11	BARO 1014.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	144 B	32477	607	2418	15024
191	0010	1412	32463	613	2423	15016
191	0020	1413	32463	609	2422	15018
191	0030	1259	32525	643	2458	14969
191	0050	0868	32660	674	2536	14833
191	0075	0656 B	32720	665	2570	14755
191	0100	0585	32718	681	2579	14731
191	0125	0555	32826	661	2591	14724
191	0150	0505	33032	628	2613	14711
191	0175	0411	33446	495	2656	14681
191	0200	0382	33628	401	2674	14675
191	0250	0362	33737	297 B	2684	14677
191	0300	0346	33804	217 B	2691	14679
191	0400	0352	33970	125	2704	14700
191	0500	0356	34082	089	2712	14720
197	0600	0350	34166	073	2720	14735
197	0800	0323	34301	065	2733	14759
197	1000	0290	34387	060	2743	14779
197	1200	0266	34442	052	2749	14803
197	1500	0230	34512	079	2758	14839
197	2000	0196	34590	133	2767	14910

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1440 B	32477	607	2418	15024	0000	00000	3750
0010	1412	32463	613	2423	15016	0037	00002	3707
0020	1413	32463	609	2422	15018	0075	00008	3711
0030	1259	32525	643	2458	14969	0110	00017	3375
0050	0868	32660	674	2536	14833	0171	00041	2633
0075	0656 B	32720	665	2570	14755	0233	00080	2306
0100	0585	32718	681	2579	14731	0290	00131	2224
0125	0555	32826	661	2591	14724	0344	00194	2111
0150	0505	33032	628	2613	14711	0395	00265	1903
0175	0411	33446	495	2656	14681	0438	00335	1496
0200	0382	33628	401	2674	14675	0473	00404	1332
0225	0369	33710	341 B	2681	14675	0506	00475	1262
0250	0362	33737	297 B	2684	14677	0538	00552	1235
0300	0346	33804	217 B	2691	14679	0598	00722	1172
0400	0352	33970	125	2704	14700	0711	01125	1061

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0356	34082	089	2712	14720	0814	01601	0989
0600	0350	34166	073	2720	14735	0911	02147	0927
0700	0338	34239	067	2726	14748	1002	02751	0867
0800	0323	34301	065	2733	14759	1087	03405	0812
1000	0290	34387	060	2743	14779	1243	04838	0726
1200	0266	34442	052	2749	14803	1384	06434	0671
1500	0230	34512	079	2758	14839	1577	09093	0594
2000	0196	34590	133	2767	14910	1859	14148	0519

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 1724	AIR T 13.8	VIS 7
CONS. NO 022	MCNTH 10	MXSAMPD 05	WAVES 2 1734	WET B 12.2	STN 404
LAT 50-010N	DAY 01	NO.DPTH 16	WND-DIR 170	WW-CODE 03	
LCN 144-590W	HR 19.5	W-COLOR	WND-SPC 11	CLD-TPE 4	
MARSD SQ 195	C/I 1802	W-TRNSP	BARO 1010.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
195	0000	139 B	32492	611	2429	15007
195	0003	1396 B	32474	615	2427	15010
195	0010	1398	32474	613	2426	15012
195	0019	1396	32473	612	2427	15012
195	0029	1394	32473	Q 672	2427	15013
195	0049	0862	32664	Q 611	2537	14831
195	0073	0646 B		674		
195	0097	0572	32716	683	2581	14725
195	0122	0525	32812	672	2594	14711
195	0146	0496	33067	621	2617	14707
195	0171	0416	33361	523	2649	14681
195	0195	0386	33614	414	2672	14676
195	0244	0368	33723	309	2683	14678
195	0293	0350	33785	229	2689	14679
195	0390	0354	33962	Q 112	2703	14699
195	0496	0359	34092	Q 127	2713	14721

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1390 B	32492	611	2429	15007	0000	00000	3640
0010	1398	32474	613	2426	15012	0037	00002	3671
0020	1400 B	32472	618	2426	15014	0074	00008	3679
0030	1372 D	32481	671	2432	15006	0110	00017	3621
0050	0847	32667	613	2540	14825	0173	00042	2598
0075	0637 B	3272 I	676	2573	14748	0234	00080	2284
0100	0565	32722	683	2582	14723	0291	00131	2198
0125	0522	32839	668	2596	14711	0344	00192	2065
0150	0483	33114	607	2622	14703	0393	00261	1818
0175	0409	33409	504	2653	14680	0435	00331	1522
0200	0383	3364 C	399	2674	14676	0471	00399	1325
0225	0372	3372 G	339 B	2682	14676	0504	00470	1258
0250	0365	33731	298	2683	14678	0535	00547	1242
0300	0349	33797	218	2690	14680	0596	00719	1180
0400	0346 C	3396 D	118 C	2703	14697	0710	01123	1065
0500	0360	34098	129	2713	14722	0813	01599	0981

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 2822	AIR T 09.9	VIS 7
CONS. NO 023	MONTH 10	MXSAMPD 42	WAVES 2 2844	WET B 08.3	STN 405
LAT 50-000N	DAY 08	NO.DPTH 26	WND-DIR 280	WW-CODE 02	
LON 145-000W	HR 19.1	W-COLOR 40	WND-SPD 07	CLD-TPE 5	
MARSD SQ 195	C/I 1802	W-TRNSP 15	BARO 1016.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	117 B	32476		2471	14932
191	0010	1198	32465		2465	14944
191	0020	1199	32464		2465	14946
191	0030	1197	32467		2465	14947
191	0050	1197	32467		2465	14950
191	0075	0638	32718	681	2573	14748
191	0100	0564	32746	673	2584	14723
191	0125	0506	32832	645	2597	14704
191	0150	0481	33091	609 B	2621	14701
191	0175	0407	33413	505	2654	14679
191	0200	0363	33610	400	2674	14667
191	0250	0348 B	33737	272	2686	14671
191	0300	0355 B	33852	197	2694	14683
191	0400	0352	33990	127	2705	14700
191	0500	0353	34115	091	2715	14719
191	0600	0339	34201	077	2723	14731
201	0800	0318	34313	057 B	2734	14757
201	1000	0291	34388	054	2743	14779
201	1200	0262	34448	060	2750	14801
201	1500	0233	34514	072	2758	14840
201	2000	0195	34590	128	2767	14909
201	2500	0174	34632	196	2772	14986
201	3000	0160 B	34660	253 B	2775	15067
201	3500	0153 B	34672	303	2777	15151
201	4000	0153 B	34675	304	2777	15239
201	4200	0153	34687 Q	235	2778	15275

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1170 B	32476	627 I	2471	14932	0000	00000	3245
0010	1198	32465		2465	14944	0033	00002	3304
0020	1199	32464		2465	14946	0066	00007	3309
0030	1197	32467		2465	14947	0099	00015	3305
0050	1197	32467		2465	14950	0166	00043	3310
0075	0638	32718	681	2573	14748	0236	00086	2285
0100	0564	32746	673	2584	14723	0292	00136	2179
0125	0506	32832	645	2597	14704	0346	00197	2052
0150	0481	33091	609 B	2621	14701	0395	00266	1833
0175	0407	33413	505	2654	14679	0437	00336	1517

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0363	33610	400	2674	14667	0473	00405	1327
0225	0348 B	3370 E	326	2682	14666	0505	00475	1250
0250	0348 B	33737	272	2686	14671	0536	00551	1221
0300	0355 B	33852	197	2694	14683	0596	00719	1145
0400	0352	33990	127	2705	14700	0706	01114	1046
0500	0353	34115	091	2715	14719	0808	01580	0961
0600	0339	34201	077	2723	14731	0901	02107	0890
0700	0328	34264	065	2729	14744	0989	02689	0838
0800	0318	34313	057 B	2734	14757	1071	03326	0798
1000	0291	34388	054	2743	14779	1226	04747	0726
1200	0262	34448	060	2750	14801	1366	06333	0662
1500	0233	34514	072	2758	14840	1558	08980	0596
2000	0195	34590	128	2767	14909	1841	14037	0518
2500	0174	34632	196	2772	14987	2095	19910	0479
3000	0160 B	34660	253 B	2775	15067	2333	26683	0456
3500	0153 B	34672	303	2777	15152	2566	34498	0452
4000	0153 B	34675	304	2777	15240	2801	43631	0464

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 2921	AIR T 11.1	VIS 7
CONS. NO 024	MONTH 10	MXSAMPD 04	WAVES 2 3044	WET B 09.4	STN 406
LAT 50-020N	DAY 11	NO.DPTH 15	WND-DIR 290	W-CCDE 02	
LON 144-580W	HR 19.4	W-COLOR 10	WND-SPD C4	CLD-TPE 3	
MARSD SQ 195	C/I 18C2	W-TRNSP 20	BARO 1019.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	115 B	32467		2474	14925
194	0003	1151	32464	607 B	2473	14926
194	0010	1153	32464	591 B	2473	14928
194	0020	1151	32464	611	2473	14929
194	0030	1151	32464	604	2473	14931
194	0050	0956 B	32603	627	2518	14865
194	0075	0592	32726	647 B	2579	14730
194	0100	0557	32761	643 B	2586	14720
194	0125	0521	32865	640	2598	14711
194	0150	0477		587		
194	0175	0400	33458	483	2658	14677
194	0200	0361	33628	381	2676	14666
194	0250	0342 B	33731	278	2686	14668
194	0300	0347	33832	196	2693	14680
194	0400	0354 B	33985	120	2705	14701

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1150 B	32467	611 C	2474	14925	0000	00000	3217
0010	1153	32464	591 B	2473	14928	0032	00002	3226
0020	1151	32464	611	2473	14929	0065	00007	3225
0030	1151	32464	604	2473	14931	0097	00015	3227
0050	0956 B	32603	627	2518	14865	0158	00039	2808
0075	0592	32726	647 B	2579	14730	0221	00079	2224
0100	0557	32761	643 B	2586	14720	0276	00128	2160
0125	0521	32865	640	2598	14711	0329	00189	2044
0150	0477	3315 I	587	2626	14701	0378	00257	1784
0175	0400	33458	483	2658	14677	0419	00325	1476
0200	0361	33628	381	2676	14666	0454	00392	1312
0225	0345 B	3370 D	320 B	2683	14665	0486	00462	1245
0250	0342 B	33731	278	2686	14668	0517	00538	1220
0300	0347	33832	196	2693	14680	0577	00706	1152
0400	0354 B	33985	120	2705	14701	0688	01104	1052

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 1822	AIR T 09.9	VIS 7
CCNS. NO 025	MCNTH 10	MXSAMPD 20	WAVES 2 2743	WET B 09.4	STN 407
LAT 49-480N	DAY 18	NO. DPTH 21	WND-DIR 180	WW-CCDE 02	
LCN 144-590W	HR 19.1	W-COLOR 10	WND-SPD 03	CLD-TPE 1	
MARSD SQ 159	C/I 18C2	W-TRNSP 19	BARO 1005.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	104 B	32542	647	2499	14887
191	0010	1028	32532	629	2500	14884
191	0020	1029	32533	640 B	2500	14886
191	0030	1027	32534	637	2500	14887
191	0050	1027	32536	631 B	2501	14890
191	0074	0588	32704	679	2578	14728
191	0099	0550	32739	678	2585	14717
191	0124	0489	33005	627	2613	14699
191	0149	0456	33283	550	2639	14693
191	0174	0468	33612	469 B	2663	14707
191	0198	0431	33706	395	2675	14697
191	0248	0388	33763	294	2684	14688
191	0297	0377	33833	222	2690	14692
191	0394	0358	33940	149	2701	14701
191	0494	0355 B	34100	097	2714	14719
198	0586	0350	34194	076	2722	14733
198	0781	0320	34312	063 B	2734	14754
198	0977	0292	34387	052	2743	14776
198	1171	0265	34444	054	2749	14798
198	1465	0231	34511	071	2758	14833
198	1953	0198	34581	127	2766	14903

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1040 B	32542	647	2499	14887	0000	00000	2977
0010	1028	32532	629	2500	14884	0030	00002	2967
0020	1029	32533	640 B	2500	14886	0060	00006	2970
0030	1027	32534	637	2500	14887	0090	00014	2968
0050	1027	32536	631 B	2501	14890	0149	00038	2970
0075	0583 B	32705	680	2578	14726	0215	00079	2229
0100	0548	32747	677	2586	14716	0270	00128	2159
0125	0487	33016	624	2614	14699	0321	00187	1894
0150	0457	33298	547	2640	14694	0366	00249	1652
0175	0467	33619	466 B	2664	14707	0404	00314	1425
0200	0429	33710	390	2675	14696	0439	00380	1318
0225	0403	3375 C	334	2681	14690	0471	00451	1266
0250	0387	33766	291	2684	14688	0503	00528	1238
0300	0376	33836	219	2691	14692	0564	00700	1178
0400	0358	33950	145	2702	14702	0678	01107	1082

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0355 B	34107	095	2714	14720	0782	01583	0969
0600	0348	34205	074	2723	14735	0876	02113	0896
0700	0334	34272	066 B	2730	14746	0963	02698	0838
0800	0317	34321	062 B	2735	14756	1046	03332	0792
1000	0289	34394	052	2743	14779	1199	04741	0719
1200	0261	34452	055	2750	14801	1338	06314	0658
1500	0228	34519	073	2759	14838	1528	08934	0587
2000	0196	34585	135	2766	14910	1810	13983	0523

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 2734	AIR T 09.4	VIS 7
CONS. NC 026	MCNTH 10	MXSAMPD 04	WAVES 2 2438	WET B 08.3	STN 408
LAT 49-490N	DAY 20	NO.DPTH 15	WND-DIR 270	WW-CCDE 14	
LCN 145-000W	HR 21.4	W-COLOR	WND-SPD 07	CLD-TPE 8	
MARSC SQ 159	C/I 18C2	W-TRNSP	BARO 989.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	0000	104 B	32531	630	2498	14887
214	0003	1035	32534	637	2499	14886
214	0010	1035	32533	633	2499	14887
214	0019	1032	32532	631	2499	14887
214	0028	1032	32536	630	2500	14889
214	0047	1018	32540	628	2502	14887
214	0071	0585	32711	680	2579	14726
214	0095	0542	32751	670	2587	14713
214	0118	0514	32915	642	2603	14707
214	0142	0468	33259	565	2635	14697
214	0166	0440	33573	467	2663	14693
214	0190	0414	33671	402	2674	14688
214	0237	0383 B	33740	312	2682	14683
214	0285	0362	33804	229	2690	14683
214	0384	0374 B	33981	144	2702	14707

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	32531	630	2498	14887	0000	00000	2985
0010	1035	32533	633	2499	14887	0030	00002	2978
0020	1032	32532	631	2500	14887	0060	00006	2975
0030	1038 B	32534	629	2499	14891	0090	00014	2985
0050	0966 H	3256 B	635	2513	14868	0149	00038	2855
0075	0564 D	3272 B	681	2582	14718	0212	00077	2197
0100	0536	32775	667	2589	14712	0267	00126	2126
0125	0501	3301 C	623	2612	14704	0317	00184	1914
0150	0458	3338 B	532	2646	14695	0362	00246	1593
0175	0430	3363 B	440	2668	14691	0399	00308	1381
0200	0406	3369 B	380	2676	14686	0433	00373	1308
0225	0389 B	3373 B	332	2681	14684	0465	00444	1265
0250	0376 B	33757	288	2684	14683	0497	00521	1233
0300	0361 B	33833	214	2692	14686	0557	00691	1165

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 0223	AIR T 07.7	VIS 6
CONS. NO 027	MCNTH 10	MXSAMPD 40	WAVES 2 3635	WET B. 06.6	STN 409
LAT 49-570N	DAY 21	NO.DPTH 26	WND-DIR 020	WW-CCDE 02	
LON 144-570W	HR 19.5	W-COLOR	WND-SPD 08	CLD-TPE 7	
MARSD SQ 159	C/I 18C2	W-TRNSP	BARO 1005.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
195	0000	101 B	32530	643	2503	14876
195	0008	1020	32530	636	2501	14881
195	0016	1022	32527	640	2501	14883
195	0024	1021	32527	641 B	2501	14884
195	0041	1023	32525	639 B	2500	14887
195	0061	0618 B	32697	683 B	2574	14738
195	0082	0577	32713	688 B	2580	14725
195	0102	0530	32761	689 B	2588	14709
195	0120	0495	33000	640 B	2612	14702
195	0143	0444	33311	581 B	2647	14688
195	0164	0440	33564	474 B	2661	14693
195	0205	0395	33696	369 B	2678	14683
195	0246	0373 B	33751	297 B	2684	14683
195	0333	0372	33881	186 B	2693	14696
195	0420	0355	34077	128	2704	14705
195	0513	0356	34094	103 B	2713	14722
205	0659	0340	34227	066	2723	14741
205	0833	0314	34330	060 B	2736	14761
205	1017	0289	34387	055	2743	14781
205	1288	0254	34459	054	2752	14813
205	1748	0211	34549	091	2762	14873
205	2214	0184	34606	170	2769	14941
205	2709	0166 B	34639	226	2773	15019
205	3224	0156 B	34662	283	2776	15104
205	3764	0152 B	34680	312	2777	15197
205	3990	0152	34684	323	2778	15237

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1010 B	32530	643	2503	14876	0000	00000	2938
0010	1021	32529	637	2501	14882	0030	00002	2958
0020	1022	32527	641	2501	14883	0059	00006	2962
0030	1040 F	3252 B	639 B	2497	14891	0089	00014	2999
0050	0846 I	3260 E	658 B	2535	14824	0146	00037	2646
0075	0569 H	3272 C	689 B	2581	14720	0207	00075	2205
0100	0535	32752	686 B	2588	14711	0262	00124	2141
0125	0489	33031	632 B	2615	14700	0313	00182	1885
0150	0441	33406	524 B	2650	14689	0356	00243	1554
0175	0429 B	3363 D	441 B	2669	14691	0393	00304	1379

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0200	0401	3370 C	379 B	2677	14684	0427	00369	1301
0225	0385	33727	331 B	2681	14682	0459	00439	1263
0250	0378 B	33757	291 B	2684	14684	0450	00516	1236
0300	0373 B	33834	222 B	2691	14691	0551	00687	1177
0400	0359	33956	138	2702	14703	0665	01094	1078
0500	0356	34078	105 B	2712	14720	0769	01575	0991
0600	0348	34180	079	2721	14734	0866	02117	0915
0700	0334	34256	063	2728	14746	0955	02712	0851
0800	0319	34315	059 B	2734	14757	1038	03353	0798
1000	0291	34383	055	2742	14780	1193	04779	0730
1200	0265	34437	053	2749	14802	1335	06383	0673
1500	0232	34505	065	2757	14840	1529	09063	0602
2000	0195	34584	133	2766	14909	1815	14164	0522
2500	0172	34627	204	2772	14986	2070	20069	0481
3000	0159 B	34653	260	2775	15067	2310	26883	0461
3500	0153 B	34672	300	2777	15152	2544	34731	0452
4000	0152	34684	323	2778	15239	2776	43780	0456

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 0521	AIR T 08.3	VIS 7
CCNS. NO 028	MCNTH 10	MXSAMPD 15	WAVES 2 2557	WET B 06.6	STN 410
LAT 50-000N	DAY 24	NO.DPTH 20	WND-DIR 050	WW-CCDE 02	
LCN 144-520W	HR 19.2	W-COLOR 10	WND-SPD C1	CLD-TPE 4	
MARSD SQ 195	C/I 1802	W-TRNSP 13	BARO 1019.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND
192	0000	104 B	32544		2499	14887
192	0010	0974	32528		2509	14864
192	0020	0975	32527		2509	14866
192	0030	0975	32528		2509	14868
192	0045	0725 B	32640		2555	14777
192	0074	0571	32707		2580	14721
192	0098	0521	32819		2595	14706
192	0123	0517	33173		2623	14713
192	0148	0490	33509		2653	14710
192	0172	0470	33668		2668	14708
192	0197	0435	33706		2674	14698
192	0246	0379	33745		2683	14683
192	0295	0376 B	33834		2691	14691
192	0394	0371	33969		2702	14707
198	0495	0366	34077		2711	14723
202	0582	0351	34166		2719	14733
202	0784	0325	34275		2730	14758
202	0984	0295	34379		2742	14778
202	1180	0266	34435		2749	14799
202	1483	0233	34507		2757	14837

I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	32544		2499	14887	0000	00000	2976
0010	0974	32528		2509	14864	0029	00001	2884
0020	0975	32527		2509	14866	0058	00006	2889
0030	0975	32528		2509	14868	0088	00013	2890
0050	0716 B	32643		2557	14774	0141	00035	2436
0075	0568	32709		2581	14720	0200	00072	2208
0100	0520	32843		2597	14706	0253	00120	2057
0125	0515	33203		2626	14713	0302	00175	1784
0150	0488	33528		2654	14710	0343	00233	1514
0175	0466	33676		2669	14707	0380	00294	1381
0200	0431	33708		2675	14697	0414	00359	1321
0225	0399	3373 B		2680	14688	0446	00431	1276
0250	0378	33752		2684	14683	0478	00508	1239
0300	0376 B	33842		2691	14692	0539	00679	1173
0400	0371	33976		2702	14708	0652	01085	1076
0500	0365	34083		2711	14724	0757	01567	0998

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0349	34179		2721	14735	0854	02112	0917
0700	0338	3424 B		2726	14747	0944	02713	0868
0800	0326	34284		2731	14760	1030	03374	0828
1000	0292	34385		2742	14780	1188	04825	0730
1200	0264	3445 B		2750	14802	1329	06416	0663
1500	0232	34509		2757	14839	1521	09070	0598

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 0433	AIR T 09.4	VIS 4
CONS. NO 029	MCNTH 10	MXSAMPD 14	WAVES 2 0544	WET B 08.8	STN NN	
LAT 49-180N	DAY 25	NO.DPTH 20	WND-DIR 040	WW-CODE 03		
LCN 143-550W	HR 06.1	W-COLOR	WND-SPD 10	CLD-TPE 7		
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1014.0	CLD-AMT 7	HW	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
061	0000	103 B	32529		2500	14883
061	0010	1038	32526		2498	14888
061	0020	1040	32529		2498	14890
061	0030	1038	32529		2498	14891
061	0049	1038	32530		2498	14894
061	0073	0604	32698		2575	14734
061	0098	0556	32723		2583	14719
061	0122	0516	32915		2603	14709
061	0147	0524	33433		2643	14723
061	0171	0493	33669		2665	14718
061	0196	0476	33723		2671	14715
061	0245	0422	33754		2680	14701
061	0294	0400	33841		2689	14701
061	0392	0388	33970		2700	14714
066	0434	0384	34014		2704	14720
066	0527	0370	34113		2713	14731
066	0715	0342	34250		2727	14752
066	0907	0309	34344		2738	14771
066	1102	0280	34409		2745	14792
066	1420	0240	34494		2756	14829

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1030 B	32529		2500	14883	0000	00000	2970
0010	1038	32526		2498	14888	0030	00002	2988
0020	1040	32529		2498	14890	0060	00006	2991
0030	1038	32529		2498	14891	0090	00014	2989
0050	1021 C	32537		2502	14888	0150	00038	2960
0075	0592 C	3270 B		2577	14730	0215	00079	2244
0100	0552	32730		2584	14717	0271	00129	2177
0125	0517	3298 D		2608	14711	0323	00189	1956
0150	0521	33474		2647	14723	0368	00251	1590
0175	0490	3369 B		2667	14717	0405	00314	1400
0200	0472	33726		2672	14714	0440	00380	1352
0225	0444	3374 B		2676	14707	0474	00453	1311
0250	0419	33762		2681	14701	0506	00533	1273
0300	0399	33850		2690	14702	0568	00708	1190
0400	0387	33979		2701	14715	0683	01119	1091
0500	0374	34085		2711	14728	0789	01606	1006

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOLND	DELTA-D	POT.EN	SVA
0600	0359	34174		2719	14739	0887	02157	0931
0700	0344	34241		2726	14750	0978	02765	0872
0800	0327	34296		2732	14760	1064	03424	0821
1000	0295	34378		2742	14781	1222	04876	0738
1200	0266	34444		2749	14803	1364	06484	0670

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 0323	AIR T 09.9	VIS 7
CONS. NO 030	MCNTH 10	MXSAMPD	15	WAVES 2 0524	WET B 08.8	STN NS
LAT 49-180N	DAY 25	NO.DPTH	20	WND-DIR 030	W-CCDE 52	
LON 145-000W	HR 14.3	W-COLOR		WND-SPD 10	CLD-TPE 5	
MARSD SQ 159	C/I 18C2	W-TRNSP		BARO 1010.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
143	0000	101 B	32515		2502	14876
143	0009	1002	32510		2503	14874
143	0019	1005	32504		2502	14877
143	0029	1004	32503		2502	14878
143	0048	1004	32505		2502	14881
143	0072	0769	32674		2552	14799
143	0096	0603	32754		2580	14738
143	0120	0531	32780		2590	14713
143	0143	0506	32951		2607	14709
143	0167	0472	33323		2640	14704
143	0191	0416	33545		2664	14687
143	0239	0375	33727		2682	14680
143	0287	0364	33793		2688	14684
143	0390	0352	33930		2701	14698
148	0489	0362	34081		2712	14721
148	0588	0352	34152		2718	14734
148	0787	0325	34283		2731	14757
148	0979	0295	34371		2741	14777
148	1175	0266	34432		2748	14799
148	1470	0232	34507		2757	14835

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1010 B	32515		2502	14876	0000	00000	2949
0010	1002	32509		2503	14874	0030	00002	2942
0020	1005	32504		2502	14877	0059	00006	2953
0030	1006	32502		2501	14879	0089	00014	2958
0050	0988 B	3252 B		2506	14876	0148	00038	2922
0075	0744	32688		2556	14790	0216	00080	2443
0100	0586	3276 B		2582	14732	0274	00132	2198
0125	0524	32803		2593	14711	0328	00195	2093
0150	0498	3306 D		2616	14708	0378	00265	1877
0175	0453	33410		2649	14698	0421	00336	1566
0200	0404	3360 B		2669	14684	0458	00408	1377
0225	0381	3370 C		2679	14680	0492	00480	1280
0250	0371	33747		2684	14681	0524	00558	1236
0300	0361	33810		2690	14686	0585	00729	1183
0400	0353	33947		2702	14700	0659	01137	1079
0500	0361	34091		2712	14722	0803	01617	0988

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0351	34161		2719	14735	0900	02164	0932
0700	0338	34229		2726	14747	0991	02772	0874
0800	0323	34290		2732	14758	1077	03432	0821
1000	0292	34378		2742	14780	1234	04880	0734
1200	0263	34444		2750	14802	1376	06480	0667

C-REF-NO 009	YR 1965	DEPTH-		WAVES 1 3135	AIR T 08.3	VIS 7
CCNS. NO 031	MONTH 10	MXSAMPD 15	WAVES 2 49XX	WET B 06.1	STN OG	
LAT 50-000N	DAY 26	NO. DPTH 20	WND-DIR 310	WW-CCDE 02		
LCN 146-060W	FR 21.3	W-COLOR	WND-SPC C9	CLD-TPE 6		
MARSD SQ 195	C/I 18C2	W-TRNSP	BARO 1004.0	CLD-AMT 7	HW	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
213	0000	C96 B	32399		2501	14856
213	0009	C948	32496		2511	14854
213	0018	C950	32492		2510	14856
213	0028	C949	32494		2510	14858
213	0046	C949	32494		2510	14861
213	0069	C582 B	32734		2581	14725
213	0093	C523	32772		2591	14705
213	0116	0461	32891		2607	14685
213	0139	0400	33325		2648	14669
213	0162	C372	33559		2669	14664
213	0185	C355	33635		2677	14662
213	0232	C342	33722		2685	14665
213	0278	C343	33811		2692	14674
213	0373	C359	33971		2703	14699
220	0488	C352	34104		2714	14717
220	0589	C343	34186		2722	14731
220	0787	C318	34302		2733	14754
220	0980	C286	34387		2743	14774
220	1178	C260	34441		2750	14797
220	1470	C232	34501		2757	14834

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	C960 B	32399		2501	14856	0000	00000	2956
0010	C948	32498		2511	14854	0029	00001	2866
0020	0950	32492		2510	14857	0058	00006	2875
0030	0955 B	32490		2509	14860	0087	00013	2887
0050	0889 I	3253 C		2523	14839	0144	00037	2759
0075	0552 F	3275 C		2586	14714	0206	00075	2160
0100	C504	3279 C		2594	14699	0259	00123	2081
0125	0435	3305 G		2623	14678	0308	00179	1811
0150	0384	33459		2660	14666	0349	00237	1457
0175	C361	3361 B		2674	14662	0384	00295	1322
0200	0348	33668		2680	14662	0417	00357	1270
0225	0343	33712		2684	14664	0449	00426	1233
0250	0341	33757		2688	14668	0479	00501	1200
0300	0347	33851		2695	14680	0538	00667	1137
0400	0359	34007		2706	14704	0648	01059	1040
0500	0351	34115		2715	14718	0749	01524	0959

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0342	34194		2722	14732	0843	02053	0898
0700	0330	34256		2729	14744	0931	02641	0846
0800	0316	34309		2734	14756	1014	03281	0799
1000	0283	34393		2744	14776	1167	04690	0714
1200	0257	34452		2751	14799	1306	06253	0654

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 2922	AIR T 08.3	VIS 7
CONS. NO 032	MCNTH 10	MXSAMPD 15		WAVES 2 3034	WET B 06.1	STN GG
LAT 50-420N	DAY 27	NC.DPTH 20		WND-DIR 290	WW-CCDE 01	
LCN 146-060W	HR 06.8	W-COLOR		WND-SPD 03	CLD-TPE 4	
MARSD SQ 195	C/I 1802	W-TRNSP		BARO 1003.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND
068	0000	092 B	32495		2515	14842
068	0009	0924	32494		2514	14845
068	0019	0924	32491		2514	14847
068	0028	0924	32491		2514	14848
068	0047	0924	32492		2514	14851
068	0071	0571	32647		2575	14720
068	0094	0477	32695		2590	14685
068	0118	0414	32838		2608	14665
068	0142	0344	33426		2661	14647
068	0166	0316	33608		2678	14641
068	0190	0313	33675		2684	14645
068	0237	0326	33789		2692	14660
068	0286	0334	33882		2698	14673
068	0384	0346	34018		2708	14696
073	0487	0346	34120		2716	14714
073	0587	0334	34203		2724	14727
073	0787	0313	34304		2734	14752
073	0982	0281	34383		2743	14772
073	1180	0256	34447		2750	14795
073	1478	0225	34509		2758	14833

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0920 B	32495		2515	14842	0000	00000	2824
0010	0924	32494		2514	14845	0028	00001	2833
0020	0924	32491		2514	14847	0057	00006	2837
0030	0930 B	32489		2513	14851	0086	00013	2849
0050	0884 F	3251 B		2522	14837	0142	00036	2768
0075	0545 C	3266 B		2579	14710	0205	00076	2222
0100	0460	3271 D		2592	14679	0259	00124	2096
0125	0392	3301 I		2623	14659	0308	00180	1803
0150	0331	3352 D		2670	14644	0348	00236	1365
0175	0313	3364 B		2681	14642	0381	00291	1256
0200	0315	33701		2686	14648	0412	00351	1214
0225	0322	33762		2690	14656	0442	00416	1176
0250	0328	33816		2694	14663	0472	00487	1143
0300	0336	33905		2700	14676	0528	00646	1087
0400	0347	34036		2709	14699	0634	01024	1007
0500	0345	34132		2717	14716	0732	01476	0940

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0333	34211		2725	14728	0824	01993	0876
0700	0323	34267		2730	14741	0910	02568	0831
0800	0311	34310		2735	14754	0992	03201	0793
1000	0278	34390		2744	14774	1144	04603	0712
1200	0253	34452		2751	14797	1282	06157	0649
1500	0223	34512		2758	14836	1470	08756	0587

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 49XX	AIR T 07.2	VIS 7
CONS. NO 033	MCNTH 10	MXSAMPD 15		WAVES 2 3022	WET B 04.9	STN GS
LAT 50-420N	DAY 27	NO.DPTH 20		WND-DIR 990	WW-CCDE 02	
LCN 145-000W	HR 14.2	W-COLOR		WND-SPD 01	CLD-TPE 8	
MARSC SQ 195	C/I 1802	W-TRNSP		BARO 1000.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
142	0000	093 B	32489		2513	14846
142	0010	0942	32487		2511	14852
142	0020	0944	32485		2510	14854
142	0030	0942	32485		2511	14855
142	0049	0894	32535		2522	14841
142	0074	0588 B	32708		2578	14728
142	0099	0535				
142	0124	0509	33010		2611	14708
142	0148	0428	33338		2646	14682
142	0173	0384 B	33547		2667	14671
142	0198	0353	33640		2677	14663
142	0247	0326	33714		2686	14660
142	0297	0342	33831		2694	14677
142	0396	0344	33982		2705	14696
150	0500	0350	34097		2714	14718
150	0600	0344	34175		2721	14733
150	0800	0317	34300		2733	14756
150	1000	0288	34393		2743	14778
150	1200	0262	34451		2750	14801
150	1500	0230	34523		2759	14839

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0930 B	32489		2513	14846	0000	00000	2844
0010	0942	32487		2511	14852	0029	00001	2865
0020	0944	32485		2510	14854	0058	00006	2872
0030	0942	32485		2511	14855	0086	00013	2870
0050	0882 B	32541		2524	14837	0143	00036	2742
0075	0583 B	32712		2579	14726	0205	00076	2224
0100	0538	3284 F		2594	14713	0260	00124	2082
0125	0506	33024		2613	14707	0310	00182	1908
0150	0423	33359		2648	14681	0354	00243	1572
0175	0381 B	33557		2668	14670	0391	00305	1383
0200	0351	33644		2678	14662	0425	00369	1290
0225	0333	3369 C		2683	14659	0456	00439	1242
0250	0326	33721		2686	14661	0487	00514	1213
0300	0342	33837		2694	14678	0547	00682	1144
0400	0344	33987		2706	14697	0657	01075	1040
0500	0350	34097		2714	14718	0759	01543	0971

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0344	34175		2721	14733	0854	02080	0914
0700	0332	34242		2727	14745	0943	02677	0859
0800	0317	34300		2733	14756	1028	03326	0807
1000	0288	34393		2743	14778	1182	04747	0719
1200	0262	34451		2750	14801	1322	06323	0660
1500	0230	34523		2759	14839	1511	08942	0586

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 2122	AIR T 07.2	VIS 7
CONS. NO 034	MCNTH 10	MXSAMPD	15	WAVES 2 2132	WET B 06.1	STN GN
LAT 50-420N	DAY 27	NO. DPTH	20	WIND-DIR 210	WW-CCDE 50	
LCN 143-520W	HR 21.4	W-COLOR		WIND-SPD 05	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP		BARO 996.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SCUND
214	0000	C98 B	32498		2506	14865
214	0010	C979	32496		2506	14866
214	0020	C980	32496		2505	14868
214	0030	C978	32499		2506	14869
214	0050	C827	32604		2538	14817
214	0075	C584 B	32723		2580	14726
214	0100	C535	32775		2590	14711
214	0125	C505 D	32929		2605	14705
214	0149	0413	33284		2643	14675
214	0174	0370	33503		2665	14664
214	0199	0348	33622		2676	14661
214	0249	0332	33754		2688	14664
214	0299	0338	33847		2695	14676
214	0399	0349	33988		2705	14699
218	0498	0351	34115		2715	14718
218	0598	0341	34195		2723	14731
218	0800	0313	34309		2734	14754
218	0999	0287	34387		2743	14778
218	1198	0262	34441		2749	14801
218	1498	0230	34516		2758	14838

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	0980 B	32498		2506	14865	0000	00000	2914
0010	0979	32496		2506	14866	0029	00002	2916
0020	0980	32496		2505	14868	0059	00006	2919
0030	0978	32499		2506	14869	0088	00014	2916
0050	0827	32604		2538	14817	0144	00036	2616
0075	0584 B	32723		2580	14726	0204	00074	2217
0100	0535	32775		2590	14711	0259	00123	2124
0125	0505 D	32929		2605	14705	0311	00183	1978
0150	0411	33295		2644	14675	0356	00246	1607
0175	0369	33509		2665	14664	0394	00309	1407
0200	0347	33626		2677	14661	0428	00374	1301
0225	0336	3370 B		2684	14661	0460	00444	1234
0250	0332	33756		2689	14664	0490	00518	1191
0300	0338	33849		2695	14676	0549	00683	1131
0400	0349	33989		2706	14699	0659	01075	1043
0500	0351	34117		2716	14718	0760	01540	0957

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0341	34196		2723	14732	0853	02068	0895
0700	0327	34259		2729	14743	0941	02653	0842
0800	0313	34309		2734	14754	1024	03290	0796
1000	0287	34387		2743	14778	1178	04705	0722
1200	0262	34446		2750	14801	1318	06289	0664
1500	0230	34516		2758	14839	1509	08927	0591

C-REF-NO 009	YR 1965	DEPTH		WAVES 1 2034	AIR T 08.8	VIS 7
CONS. NO 035	MONTH 10	MXSAMPD 15		WAVES 2 2046	WET B 08.3	STN ON
LAT 50-000N	DAY 29	NO.DPTH 20		WNC-DIR 200	WW-CCDE 02	
LCN 143-540W	HR 20.1	W-COLOR		WND-SPD 07	CLD-TPE 4	
MARSD SQ 195	C/I 1802	W-TRNSP		BARO 1010.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
201	0000	098 B	32527		2508	14865
201	0010	0952	32499		2510	14856
201	0019	0954	32500		2510	14858
201	0029	0952	32498		2510	14859
201	0049	0953	32499		2510	14863
201	0073	0718	32653		2557	14779
201	0097	0559	32714		2582	14720
201	0122	0494	32867		2602	14699
201	0146	0476	33267		2635	14701
201	0170	0467	33631		2665	14706
201	0195	0439	33701		2674	14700
201	0243	0385	33734		2682	14685
201	0292	0376	33814		2689	14690
201	0389	0363	33959		2702	14703
206	0488	0362 B	34091		2712	14721
206	0587	0353	34179		2720	14734
206	0793	0325	34295		2732	14758
206	0989	0295	34378		2742	14779
206	1182	0266	34441		2749	14800
206	1486	0231	34523		2759	14837

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0980 B	32527		2508	14865	0000	00000	2893
0010	0952	32499		2510	14856	0029	00001	2872
0020	0954	32500		2510	14858	0058	00006	2876
0030	0954	32497		2510	14860	0087	00013	2880
0050	0945	32505		2512	14860	0145	00037	2864
0075	0701	32658		2560	14773	0211	00079	2409
0100	0547	32723		2584	14716	0269	00130	2177
0125	0490	3291 B		2605	14699	0321	00190	1976
0150	0475	3334 B		2641	14702	0366	00254	1640
0175	0462	3366 C		2668	14705	0405	00317	1390
0200	0432	33707		2675	14698	0439	00383	1325
0225	0403	3373 B		2679	14689	0472	00454	1281
0250	0382	33744		2683	14685	0504	00532	1249
0300	0375	33827		2690	14691	0565	00705	1184
0400	0363	33975		2703	14705	0679	01110	1068
0500	0361 B	34103		2713	14722	0782	01586	0978

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0351	34188		2721	14736	0877	02124	0912
0700	0339	34250		2727	14748	0967	02721	0860
0800	0324	34298		2733	14759	1052	03373	0815
1000	0293	34382		2742	14780	1208	04816	0733
1200	0265	34449		2750	14802	1350	06412	0664
1500	0230	34526		2759	14839	1540	09034	0584

C-REF-NO 009	YR 1965	DEPTH C 4220	WAVES 1 2624	AIR T 08.3	VIS 7
CONS. NO 036	MCNTH 10	MXSAMPD 14	WAVES 2 2647	WET B 06.6	STN 411
LAT 50-000N	DAY 30	NO.CPTH 20	WND-DIR 260	WW-CCDE 02	
LCN 145-000W	HR 19.6	W-COLOR	WND-SPC 08	CLD-TPE 8	
MARSD SQ 195	C/I 18C2	W-TRNSP	BARO 1006.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	C94 B	32516		2513	14850
196	0010	C921	32506		2516	14844
196	0019	C922	32513		2516	14846
196	0029	C921	32523		2517	14848
196	0048	C921	32510		2516	14851
196	0072	C580 B	32718		2580	14724
196	0096	C532	32764		2589	14709
196	0121	C504	33038		2614	14705
196	0145	0446	33375		2647	14690
196	0169	0450	33648		2668	14699
196	0193	0413	33701		2676	14688
196	0241	0391	33778		2685	14688
196	0290	0368	33824		2691	14687
196	0389	0371	33978		2703	14707
202	0473	0368 B	34078		2711	14721
202	0569	C350	34176		2720	14730
202	0760	C322	34300		2733	14752
202	0954	C294	34375		2741	14773
202	1151	C268	34433		2748	14795
202	1446	C235	34495		2756	14832

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0940 B	32516		2513	14850	0000	00000	2839
0010	0921	32506		2516	14844	0028	00001	2820
0020	0922	32514		2516	14846	0057	00006	2817
0030	0924	32521		2516	14849	0085	00013	2816
0050	0894 D	3253 B		2521	14841	0141	00036	2772
0075	0565 C	3272 B		2582	14719	0204	00075	2196
0100	0528	32797		2592	14709	0258	00124	2099
0125	0493	33094		2620	14702	0308	00180	1842
0150	0446 B	3344 B		2652	14692	0350	00240	1532
0175	0442	3367 B		2671	14697	0386	00300	1358
0200	0408	33714		2678	14687	0420	00364	1293
0225	0395 B	33756		2683	14686	0452	00434	1251
0250	0386	33787		2686	14687	0483	00510	1221
0300	0367	33839		2692	14688	0543	00680	1167
0400	0371	33992		2704	14709	0656	01082	1064
0500	0364 B	34108		2714	14724	0759	01556	0978

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0345	34201		2723	14733	0853	02089	0896
0700	0330	34269		2730	14745	0941	02673	0837
0800	0316	34318		2735	14756	1023	03307	0792
1000	0288	34390		2743	14778	1177	04718	0721
1200	0262	34447		2750	14801	1317	06301	0663

C-REF-NO 009	YR 1965	DEPTH C 3909	WAVES 1 2334	AIR T 08.3	VIS 7
CONS. NO 037	MCNTH 11	MXSAMPD 04	WAVES 2 2334	WET B 06.6	STN 012
LAT 49-490N	DAY C2	NC.DPTH 14	WND-DIR 230	W-CCDE 01	
LCN 142-400W	HR 04.3	W-COLOR	WND-SPD 12	CLD-TPE 1	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1001.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SCLND
043	0000	C96 B	32533		2512	14858
043	0009	C956	32525		2512	14857
043	0018	C958	32526		2511	14860
043	0027	C959	32526		2511	14862
043	0046	C960	32528		2511	14865
043	0069	C655 B	32692		2568	14754
043	0092	0579	32705		2579	14727
043	0115	C501	32797		2595	14700
043	0138	0466	33101		2623	14693
043	0161	0454	33464		2653	14697
043	0184	0441	33668		2671	14698
043	0231	C386	33729		2681	14684
043	0279	0372	33803		2689	14686
043	0376	C368	33966		2702	14703

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	C960 B	32533		2512	14858	0000	00000	2857
0010	C956	32525		2512	14858	0029	00001	2859
0020	C958	32526		2511	14860	0058	00006	2863
0030	C967 C	32522		2510	14865	0086	00013	2881
0050	C911 G	3256 C		2521	14848	0143	00037	2774
0075	C624 D	3270 C		2573	14742	0207	00076	2282
0100	C550	3272 B		2584	14716	0263	00127	2181
0125	C482	3291 B		2606	14695	0315	00187	1965
0150	C458	3330 C		2639	14695	0361	00250	1655
0175	C447	33604		2665	14698	0400	00314	1414
0200	C422 B	3372 F		2676	14693	0434	00380	1308
0225	C393	3373 C		2681	14686	0466	00451	1265
0250	C377	33757		2684	14683	0498	00528	1235
0300	C357 C	33834		2692	14684	0558	00698	1160

SECTION IV

Bathythermograms

EXPLANATION OF DATA HEADINGS

CON No: The consecutive BT slide number.

LAT. }
LONG: } Position of platform at time of BT lowering.

DATE: Day Day
Mon Month
Yr Year

TIME: Hrs The Greenwich Mean Time at which the BT
Min lowering was made

DEPTH: The sounding reported in metres. A letter in high order position indicates a chart depth,
eg: J700 = 1700 m, chart depth
J100 = 1100 m, chart depth
K300 = 2300 m, chart depth
K100 = 2100 m, chart depth

BAR: Mbs Barometric pressure; prefix all listed values by 10, or by 9 if a minus (-) sign is present, to obtain the pressure in whole millibars.
eg: 02 = 1002 mbs
17 = 1017 mbs
-98 = 998 mbs
-86 = 986 mbs.

WW Code: Refer to Table 7, Section II

WIND Amt: Wind speed in meters per second

WAVES - 1: P H Refer to Tables 4 & 5, Section II

WAVES - 11: P H Refer to Tables 4 & 5, Section II

CLOUD: T A Refer to Tables 8 & 9, Section II

CCGS "ST. CATHARINES"

BATHYTHERMOGRAMS

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TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
001	48	33	125	33	17	09	65	23	24	72	19	02	00	00		44		7	4
002	48	38	126	00	18	09	65	1	30	68	19	02	01	21		32		7	4
003	48	42	126	40	18	09	65	4	00	711	20	02	03	21		33		8	2
004	48	46	127	40	18	09	65	8	35	1367	20	02	10	21		25		8	1
005	48	56	129	40	18	09	65	17	20	1422	23	15	21	24		36		7	6
006	49	02	130	40	18	09	65	21	05	1602	24	01	20	22		24		8	2
007	49	05	131	40	19	09	65	1	40	1572	24	18	25	23		34		9	8
008	49	10	132	40	19	09	65	6	00	1791	27	50	34	24		35		7	9
009	49	15	133	40	19	09	65	9	35	1750	29	02	25	24		34		7	7
010	49	17	134	40	19	09	65	12	56	1941	29	53	21	23		24		7	8
011	49	23	135	40	19	09	65	16	15	1750	31	40	20	22		23		X	X
012	49	26	136	40	19	09	65	19	24	2064	32	44	16	22		23		8	2
013	49	30	137	40	20	09	65	17		2105	32	44	12	22		23		8	6
014	49	34	138	40	20	09	65	3	38	2127	32	42	12	21		21		6	7
015	49	37	139	40	20	09	65	7	23	2100	32	44	10	21		22		8	3
016	49	41	140	40	20	09	65	10	35	2122	32	47	05	21		21		X	9
017	49	45	141	40	20	09	65	12	48	2171	32	45	08	21		21		X	9
018	49	49	142	40	20	09	65	19	00	2138	32	44	08	21		31		8	1
019	5	0	143	54	21	09	65	2	28	0	31	44	08	21		21		8	6
020	5	42	143	52	21	09	65	9	15	0	32	44	08	21		31			0
021	5	42	145	00	21	09	65	17	16	0	31	45	10	22		22		X	9
022	5	37	146	03	22	09	65	12		0	30	44	20	22		23			0
023	5	0	146	05	22	09	65	6	18	0	28	03	20	23		34		7	8
024	49	18	146	05	22	09	65	21	18	0	26	02	20	23		34		7	7
025	49	18	145	00	23	09	65	7	00	0	26	02	20	23		34		7	7
026	49	18	143	55	23	09	65	17	12	0	27	02	18	22		55		7	7
027	49	32	144	20	23	09	65	21	00	0	28	02	18	45		34		6	8
028	49	42	144	41	24	09	65	0		2300	28	46	16	34		44		7	8

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W - I		W - II		CLOUD I - A
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	
029	49	57	144	57	24	09	65	3	00	2300	29	02	18	34	XX			6 6
030	5	0	145	00	24	09	65	6	00	2300	31	02	14	34	XX			6 5
031	5	2	144	59	24	09	65	9	00	2300	32	02	13	33	XX			6 3
032	5	1	144	59	24	09	65	12	00	2300	32	02	14	32	XX			6 4
033	5	0	145	00	24	09	65	15	00	2300	32	02	13	33	22			6 3
034	49	58	145	05	24	09	65	18	00	2300	33	02	13	22	54			2 7
035	49	57	145	06	24	09	65	18	30	2300	31	02	06	21	44			3 2
036	49	56	145	07	24	09	65	21	00	2300	33	02	13	22	54			0 6
037	49	55	145	12	25	09	65		0	2300	31	02	13	22	65			1 6
038	49	59	145	04	25	09	65	3	00	2300	31	02	20	22	65			6 7
039	5	0	145	01	25	09	65	6	00	2300	31	02	14	22	54			6 8
040	5	4	145	04	25	09	65	9	00	2300	30	02	11	22	XX			6 8
041	5	6	145	05	25	09	65	12	00	2300	29	02	17	23	XX			6 8
042	5	0	145	00	25	09	65	15	00	2300	28	02	12	22	XX			6 8
043	49	58	145	00	25	09	65	18	00	2300	27	02	13	22	54			6 8
044	5	2	145	02	25	09	65	21	00	2300	27	02	12	22	54			6 8
045	5	3	145	04	26	09	65		0	2300	24	20	22	23	53			7 8
046	5	5	145	04	26	09	65	3	00	2300	24	20	17	23	53			7 7
047	5	1	145	00	26	09	65	6	00	2300	23	02	18	23	XX			7 8
048	5	1	144	58	26	09	65	9	00	2300	22	02	24	23	XX			7 8
049	5	5	144	55	26	09	65	12	00	2300	21	02	20	24	XX			7 8
050	49	57	144	58	26	09	65	15	00	2300	21	02	16	34	33			6 8
051	5	0	144	58	26	09	65	18	00	2300	19	02	17	35	33			2 7
052	5	4	144	57	26	09	65	21	00	2300	18	02	18	35	33			3 7
053	5	7	144	55	27	09	65		0	2300	17	02	22	24	35			6 8
054	49	57	145	01	27	09	65	3	00	2300	17	02	22	34	35			6 8
055	49	57	144	58	27	09	65	6	00	2300	18	61	11	33	35			7 8
056	49	57	144	56	27	09	65	9	00	2300	19	02	19	33	XX			6 3
057	5	0	144	53	27	09	65	12	00	2300	20	02	10	23	XX			6 4
058	5	0	144	50	27	09	65	15	00	2300	20	02	12	23	XX			6 6

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND 'AmI	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
059	49	59	144	59	27	09	65	18	00	2300	22	02	18	23	34	6	8		
060	5	0	144	57	27	09	65	19	05	2300	24	02	09	22	33	4	5		
061	5	1	144	57	27	09	65	21	00	2300	23	02	12	23	34	6	8		
062	5	1	144	55	28	09	65		0	2300	22	02	09	22	34	6	8		
063	5	2	144	52	28	09	65	3	00	2300	22	02	06	22	34	6	8		
064	5	1	144	58	28	09	65	6	00	2300	21	61	05	21	XX	5	8		
065	5	3	145	02	28	09	65	9	00	2300	20	61	10	22	XX	5	8		
066	5	6	145	02	28	09	65	12	00	2300	17	61	14	33	XX	7	8		
067	5	0	144	56	28	09	65	15	00	2300	14	63	22	35	XX	7	8		
068	49	59	145	00	28	09	65	18	00	2300	13	51	26	26	35	7	8		
069	49	59	145	04	28	09	65	21	00	2300	13	02	21	35	35	7	8		
070	49	56	145	08	29	09	65		0	2300	12	02	22	35	35	6	8		
071	5	0	145	02	29	09	65	3	00	2300	13	02	15	23	35	6	7		
072	5	0	145	02	29	09	65	6	00	2300	13	02	11	23	35	6	8		
073	49	58	145	01	29	09	65	9	00	2300	13	21	09	23	34	7	8		
074	5	4	145	02	29	09	65	12	00	2300	12	02	10	33	XX	7	8		
075	49	58	145	01	29	09	65	15	00	2300	12	02	09	34	XX	7	8		
076	5	0	145	00	29	09	65	18	00	2300	13	15	11	22	44	3	7		
077	5	0	145	00	29	09	65	18	30	2300	14	02	07	21	33	8	4		
078	49	58	144	58	29	09	65	21	00	2300	14	03	15	22	44	8	6		
079	5	0	144	59	30	09	65		0	2300	13	02	14	22	44	8	3		
080	49	58	144	55	30	09	65	3	00	2300	13	02	15	22	44	8	5		
081	5	0	144	59	30	09	65	6	00	2300	13	50	06	22	XX	6	7		
082	49	57	144	57	30	09	65	9	00	2300	13	25	07	22	XX	8	7		
083	49	58	144	55	30	09	65	12	00	2300	12	80	19	33	XX	8	7		
084	5	2	145	02	30	09	65	15	00	2300	12	02	17	34	33	8	8		
085	5	1	144	58	30	09	65	18	00	2300	13	15	16	33	33	9	6		
086	5	1	144	54	30	09	65	21	00	2300	14	15	22	34	33	9	6		
087	5	0	144	53	1	10	65		0	2300	14	15	26	35	XX	8	6		
088	5	0	144	55	1	10	65	3	00	2300	15	80	24	44	XX	8	4		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH	BAR	W. W.	WIND	W. T.		W. T.		T. ID	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Meters	Mbs	Code	Am	P	H	P	H	T	A
089	49	59	144	57	1	10	65	6	00	2300	16	02	16	44	XX			8	4
090	5	0	145	00	1	10	65	9	00	2300	16	02	16	44	XX			8	3
091	5	2	144	53	1	10	65	12	00	2300	15	02	14	33	XX			8	7
092	49	59	144	55	1	10	65	15	00	2300	13	02	17	23	XX			6	7
093	5	0	144	58	1	10	65	18	00	2300	10	25	23	24	34			0	7
094	5	1	144	59	1	10	65	19	02	2300	10	03	23	24	34			4	6
095	5	3	144	59	1	10	65	21	00	2300	06	02	27	35	34			4	8
096	5	3	144	54	2	10	65		0	2300	02	02	37	39	33			4	8
097	49	57	144	52	2	10	65	3	00	2300	-97	15	39	40	XX			8	8
098	49	54	144	52	2	10	65	6	00	2300	-94	61	31	49	XX			5	8
099	49	56	145	13	2	10	65	15	00	2300	-89	61	21	33	XX			7	8
100	5	0	145	01	2	10	65	18	00	2300	-90	02	23	34	36			8	3
101	49	58	144	58	2	10	65	21	00	2300	-92	02	19	33	47			8	5
102	5	2	144	58	3	10	65		0	2300	-91	27	25	34	47			9	2
103	5	2	145	04	3	10	65	3	00	2300	-91	01	25	35	47			8	3
104	5	1	145	04	3	10	65	6	00	2300	-91	25	23	35	46			8	3
105	5	3	145	00	3	10	65	9	00	2300	-91	02	14	34	46			8	4
106	5	6	144	56	3	10	65	12	00	2300	-89	02	10	21	XX			8	6
107	5	2	144	57	3	10	65	15	00	2300	-87	80	06	20	XX			8	8
108	5	3	144	55	3	10	65	18	00	2300	-84	21	07	20	46			6	8
109	5	3	144	54	3	10	65	21	00	2300	-79	61	10	21	46			5	8
110	5	4	144	57	4	10	65		0	2300	-72	61	26	24	36			7	8
111	5	6	145	05	4	10	65	3	00	2300	-63	61	30	37	XX			7	8
112	5	2	145	11	4	10	65	6	00	2300	-53	61	32	37	XX			5	8
113	5	3	145	15	4	10	65	9	00	2300	-48	61	22	36	XX			5	8
114	5	1	144	54	6	10	65	21	00	2300	03	15	17	23	49			9	5
115	5	1	144	49	7	10	65		0	2300	03	02	15	34	48			8	5
116	5	2	144	46	7	10	65	3	00	2300	03	02	22	24	47			8	2
117	5	6	144	40	7	10	65	6	00	2300	05	02	20	24	47			8	3
118	5	0	144	54	7	10	65	9	00	2300	07	02	26	24	46			8	5

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Aml	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
119	5	2	144	58	7	10	65	12	00	2300	07	02	20	24	46	8	6		
120	49	57	144	54	7	10	65	15	00	2300	08	01	15	23	45	6	3		
121	5	0	145	03	7	10	65	18	00	2300	08	02	17	33	45	2	4		
122	5	4	145	01	7	10	65	21	00	2300	08	80	17	34	44	9	7		
123	5	7	144	55	8	10	65		0	2300	07	80	13	22	44	8	6		
124	49	58	145	01	8	10	65	3	00	2300	08	15	19	33	44	9	6		
125	49	55	144	56	8	10	65	6	00	2300	09	27	20	33	44	9	3		
126	49	56	144	50	8	10	65	9	00	2300	10	03	22	33	44	8	5		
127	49	58	144	53	8	10	65	12	00	2300	12	02	28	33	44	8	5		
128	49	57	144	53	8	10	65	15	00	2300	14	02	29	34	44	8	5		
129	5	0	145	00	8	10	65	18	00	2300	15	02	15	34	34	8	5		
130	5	0	145	00	8	10	65	18	30	2300	16	02	14	22	44	5	2		
131	5	1	144	56	8	10	65	21	00	2300	16	02	15	33	34	8	5		
132	5	0	144	55	9	10	65		0	2300	15	02	13	22	44	6	7		
133	5	0	144	52	9	10	65	3	00	2300	13	02	15	22	44	8	6		
134	5	2	144	47	9	10	65	6	00	2300	12	02	23	33	44	4	8		
135	49	59	145	00	9	10	65	9	00	2300	10	02	32	47	44	6	8		
136	5	8	144	56	9	10	65	12	00	2300	07	02	30	XX	XX	7	8		
137	5	0	145	00	9	10	65	15	00	2300	06	61	39	XX	XX	7	8		
138	49	58	145	02	9	10	65	18	00	2300	05	61	37	39	45	7	8		
139	49	52	145	02	9	10	65	21	00	2300	04	61	39	39	45	7	8		
140	49	49	145	01	10	10	65		0	2300	02	61	42	49	45	7	8		
141	49	58	145	00	10	10	65	3	00	2300	01	61	37	42	44	7	8		
142	49	53	145	02	10	10	65	6	00	2300	00	61	35	42	44	7	8		
143	49	50	145	01	10	10	65	9	00	2300	-99	21	33	42	XX	7	8		
144	49	45	145	00	10	10	65	12	00	2300	-99	21	16	42	XX	7	8		
145	49	47	144	58	10	10	65	15	00	2300	-99	02	06	32	47	3	5		
146	5	0	144	58	10	10	65	18	00	2300	00	02	10	21	47	8	1		
147	5	0	144	59	10	10	65	21	00	2300	01	02	10	22	47	8	2		
148	5	6	144	59	11	10	65		0	2300	02	02	09	21	47	6	7		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
149	5	0	144	56	11	10	65	3	00	2300	03	01	11	21	46	8	2		
150	5	0	144	52	11	10	65	6	00	2300	05	02	11	21	46	8	3		
151	5	4	144	51	11	10	65	9	00	2300	07	02	13	XX	XX	8	2		
152	5	3	144	52	11	10	65	12	00	2300	11	02	20	XX	XX	8	5		
153	5	2	144	58	11	10	65	15	00	2300	15	02	10	33	49	8	5		
154	5	2	144	58	11	10	65	18	00	2300	17	02	10	31	49	0	4		
155	5	2	144	58	11	10	65	19	00	2300	01	02	08	21	44	3	3		
156	5	2	144	57	11	10	65	21	00	2300	19	01	05	31	47	6	2		
157	5	2	144	51	12	10	65		0	2300	19	02	12	22	35	8	7		
158	5	2	144	46	12	10	65	3	00	2300	18	02	16	22	44	6	8		
159	49	58	144	58	12	10	65	6	00	2300	18	02	25	23	44	6	6		
160	5	3	144	55	12	10	65	9	00	2300	16	02	28	34	44	6	7		
161	5	9	144	53	12	10	65	12	00	2300	11	03	40	36	XX	6	8		
162	5	3	144	55	12	10	65	15	00	2300	11	02	45	37	XX	6	8		
163	5	0	144	59	12	10	65	18	00	2300	06	51	42	37	44	7	8		
164	49	57	145	03	12	10	65	21	00	2300	04	61	34	39	45	7	8		
165	49	47	145	10	13	10	65		0	2300	02	10	28	38	45	6	7		
166	49	57	144	53	13	10	65	3	00	2300	00	02	25	38	36	6	7		
167	5	3	144	45	13	10	65	6	00	2300	-99	02	32	XX	XX	6	7		
168	5	3	144	48	13	10	65	9	00	2300	-99	15	40	XX	XX	8	5		
169	5	2	144	52	13	10	65	12	00	2300	-99	80	30	XX	XX	8	6		
170	49	57	144	56	13	10	65	15	00	2300	00	80	25	36	XX	9	6		
171	49	52	145	03	13	10	65	18	00	2300	02	80	24	34	47	9	7		
172	49	52	145	00	13	10	65	21	00	2300	03	02	37	38	45	8	6		
173	49	56	144	47	14	10	65		0	2300	05	15	38	49	47	9	6		
174	49	55	144	52	14	10	65	3	00	2300	09	15	42	41	47	9	8		
175	49	53	144	57	14	10	65	6	00	2300	12	15	39	43	XX	9	6		
176	49	57	145	06	14	10	65	9	00	2300	13	02	37	46	XX	9	7		
177	49	59	145	14	14	10	65	12	00	2300	14	02	33	47	XX	8	7		
178	5	4	145	23	14	10	65	15	00	2300	15	80	33	48	XX	8	7		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
179	5	5	145	24	14	10	65	18	00	2300	16	15	30	49	XX			9	4
180	5	1	145	10	14	10	65	21	00	2300	17	02	29	49	XX			9	6
181	5	2	144	54	15	10	65		0	2300	17	02	28	49	44			8	4
182	5	0	145	04	15	10	65	3	00	2300	17	02	29	49	45			3	7
183	5	3	145	05	15	10	65	6	00	2300	16	01	30	XX	XX			8	5
184	5	5	144	58	15	10	65	9	00	2300	14	61	24	XX	XX			6	8
185	5	10	144	52	15	10	65	12	00	2300	11	61	22	XX	XX			7	8
186	5	3	144	58	15	10	65	15	00	2300	06	02	36	49	XX			6	8
187	5	0	145	03	15	10	65	18	00	2300	02	51	42	49	XX			7	8
188	49	55	145	04	15	10	65	21	00	2300	01	20	35	49	XX			7	8
189	49	54	145	12	16	10	65		0	2300	01	02	36	59	49			7	7
190	49	51	145	17	16	10	65	3	00	2300	02	15	40	49	49			8	6
191	49	47	145	26	16	10	65	6	00	2300	03	25	46	49	XX			9	5
192	49	50	145	00	17	10	65	18	00	2300	08	15	32	39	47			9	4
193	49	50	144	45	18	10	65		0	2300	10	02	28	49	47			9	4
194	49	54	144	57	18	10	65	3	00	2300	11	02	30	49	47			8	6
195	49	58	145	04	18	10	65	6	00	2300	11	02	23	36	47			8	3
196	5	6	145	14	18	10	65	9	00	2300	10	02	20	XX	XX			8	3
197	5	10	145	19	18	10	65	12	00	2300	08	03	15	XX	XX			6	8
198	5	1	145	00	18	10	65	15	00	2300	07	02	10	XX	XX			6	7
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200	49	48	144	59	18	10	65	18	30	2300	05	02	06	22	43			1	5
201	49	50	145	00	18	10	65	21	00	2300	01	02	11	31	57			6	8
202	49	59	144	59	19	10	65		0	2300	-97	02	21	33	56			6	8
203	5	1	144	57	19	10	65	3	00	2300	-93	61	19	32	46			6	8
204	5	2	144	56	19	10	65	6	00	2300	-89	61	15	32	XX			5	8
205	5	6	144	56	19	10	65	9	00	2300	-86	61	18	32	XX			7	8
206	5	8	144	59	19	10	65	12	00	2300	-82	61	16	32	XX			7	8
207	5	1	144	55	19	10	65	15	00	2300	-81	02	21	33	XX			7	8
208	5	2	144	51	19	10	65	18	00	2300	-80	02	17	34	32			8	7

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbt	W W Code	WIND Amt	W-1		W-11		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
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210	5	1	144	49	20	10	65		0	2300	-80	02	26	33	46	8	3		
211	5	4	144	45	20	10	65	3	00	2300	-79	25	16	34	34	9	4		
212	5	10	144	41	20	10	65	6	00	2300	-77	80	38	37	XX	9	6		
213	5	8	144	40	20	10	65	9	00	2300	-78	80	39	37	XX	9	5		
214	49	51	144	51	20	10	65	18	00	2300	-86	15	30	38	XX	8	7		
215	49	49	145	00	20	10	65	21	00	2300	-89	14	15	38	34	8	6		
216	49	59	144	57	21	10	65		0	2300	-91	02	20	36	33	8	4		
217	5	6	144	51	21	10	65	3	00	2300	-95	15	23	34	46	6	7		
218	5	3	144	58	21	10	65	6	00	2300	00	01	22	34	XX	6	3		
219	5	0	144	56	21	10	65	9	00	2300	03	03	23	33	XX	6	4		
220	5	1	144	55	21	10	65	12	00	2300	06	02	16	33	XX	6	3		
221	5	2	144	54	21	10	65	15	00	2300	06	02	16	33	33	6	3		
222	5	1	144	58	21	10	65	18	00	2300	05	02	19	33	33	6	8		
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224	49	58	144	56	21	10	65	21	00	2300	03	02	29	35	33	6	8		
225	49	58	145	02	22	10	65		0	2300	-99	02	25	35	32	6	8		
226	49	50	145	08	22	10	65	3	00	2300	-95	61	30	27	35	7	8		
227	49	56	144	50	23	10	65	3	00	2300	02	02	22	38	46	6	4		
228	49	57	144	50	23	10	65	6	00	2300	05	03	18	XX	XX	6	6		
229	49	58	144	57	23	10	65	9	00	2300	06	01	18	XX	XX	6	3		
230	5	6	144	53	23	10	65	12	00	2300	06	02	15	XX	XX	6	2		
231	5	1	144	59	23	10	65	15	00	2300	05	03	23	34	XX	6	6		
232	5	2	144	59	23	10	65	18	00	2300	03	61	34	36	XX	6	8		
233	49	56	145	01	23	10	65	21	00	2300	01	21	38	39	XX	6	8		
234	49	53	145	02	24	10	65		0	2300	05	20	26	34	48	7	8		
235	49	55	144	54	24	10	65	3	00	2300	09	02	20	34	38	8	4		
236	49	53	144	48	24	10	65	6	00	2300	13	02	18	33	XX	6	5		
237	49	54	144	46	24	10	65	9	00	2300	14	02	17	33	XX	6	4		
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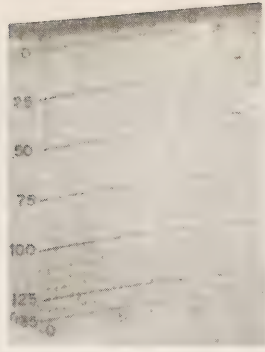
CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Aml	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
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240	5	0	144	54	24	10	65	18	00	2300	18	02	04	20	56			6	7
241	5	0	144	52	24	10	65	18	45	2300	01	02	02	21	57			4	6
242	49	18	143	55	25	10	65	5	36	0	01	03	20	33	44			7	7
243	49	18	145	00	25	10	65	13	50	0	01	52	20	23	24			5	8
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246	5	0	146	06	26	10	65	21	00	0	03	02	19	35	XX			6	7
247	5	42	146	06	27	10	65	6	35	0	03	01	06	22	34			4	4
248	5	42	145	00	27	10	65	13	45	0	00	02	XX	XX	22			8	4
249	5	42	143	52	27	10	65	21	00	0	-96	50	10	22	32			6	7
250	5	2	143	54	28	10	65	6	00	0	00	02	34	36	XX			8	3
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253	49	53	144	31	28	10	65	18	00	0	00	15	35	39	XX			8	4
254	49	46	144	41	28	10	65	21	00	2300	01	25	40	39	XX			9	3
255	49	46	144	48	29	10	65		0	2300	02	15	39	49	XX			9	2
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257	49	41	145	12	29	10	65	6	00	2300	05	01	36	XX	XX			8	4
258	49	44	145	01	29	10	65	9	00	2300	07	01	26	XX	XX			8	1
259	49	51	144	52	29	10	65	12	00	2300	07	02	25	36	XX			8	3
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261	49	56	144	13	29	10	65	18	00	0	09	02	20	33	45			8	6
262	5	0	143	54	29	10	65	19	40	0	01	02	15	34	46			4	4
263	5	0	143	54	29	10	65	21	00	0	08	02	28	35	44			6	7
264	5	0	144	02	30	10	65		0	0	04	02	33	35	44			3	7
265	49	56	144	04	30	10	65	3	00	0	02	25	30	25	34			6	7
266	49	53	144	18	30	10	65	6	00	0	01	25	38	37	XX			8	5
267	49	43	144	45	30	10	65	15	00	2300	05	80	29	XX	XX			6	6
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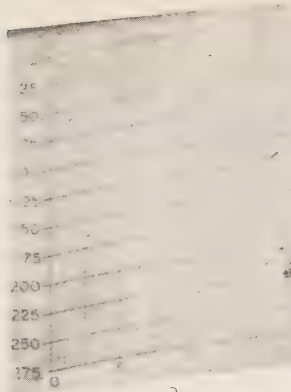
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	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
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270	5	0	145	00	30	10	65	21	00	2300	05	02	18	35	47	8	4		
271	49	58	145	07	31	10	65		0	2300	03	02	17	44	45	9	3		
272	5	0	145	17	31	10	65	3	00	2300	03	02	14	45	44	9	3		
273	49	58	145	17	31	10	65	6	00	2300	03	01	14	XX	XX	8	2		
274	49	59	145	02	31	10	65	9	00	2300	03	02	10	XX	XX	8	2		
275	5	2	144	58	31	10	65	12	00	2300	02	02	16	34	XX	8	3		
276	5	2	145	03	31	10	65	15	00	2300	00	02	29	35	XX	8	2		
277	5	0	144	58	31	10	65	18	00	2300	-99	15	26	24	46	6	7		
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280	49	57	145	07	1	11	65	3	00	2300	-99	14	34	36	45	8	6		
281	5	0	145	15	1	11	65	6	00	2300	00	25	33	36	XX	9	5		
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290	49	46	142	32	2	11	65	6	00	0	-99	03	30	35	XX	6	6		
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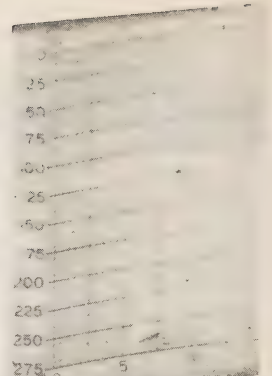
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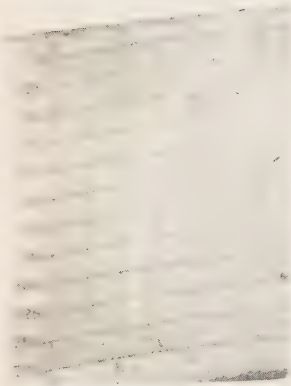
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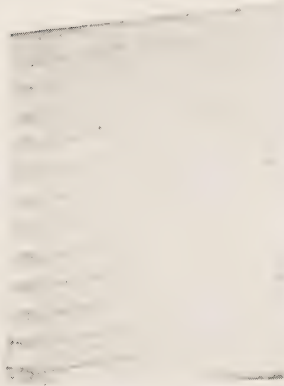
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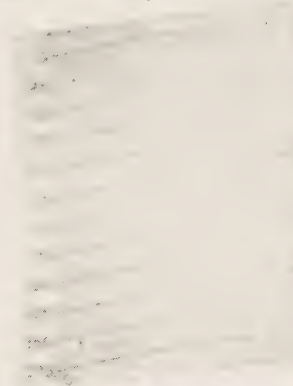
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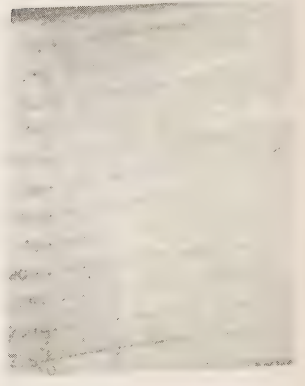
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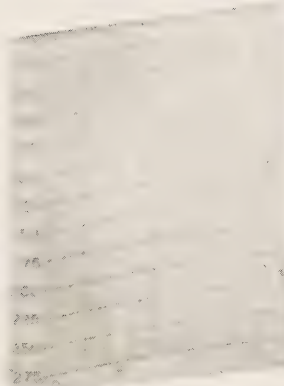
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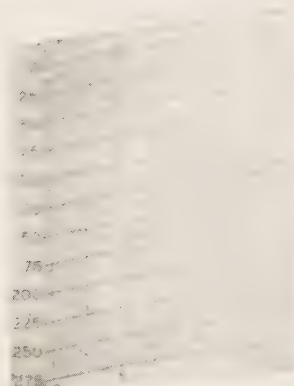
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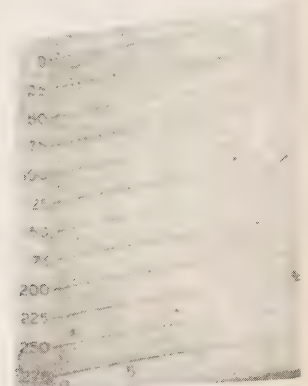
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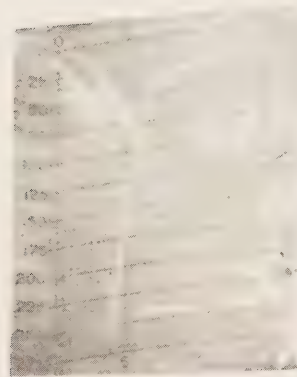
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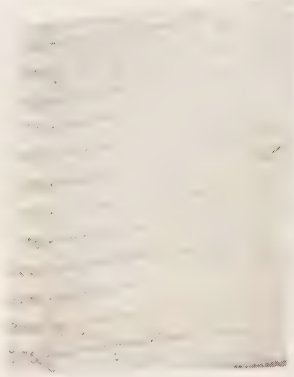
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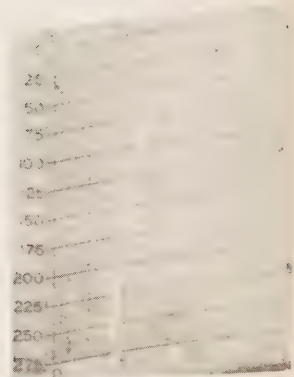
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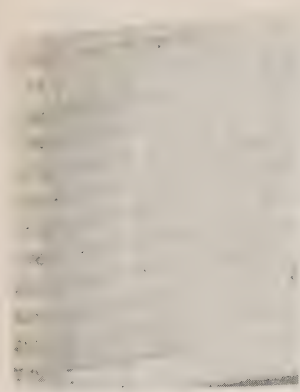
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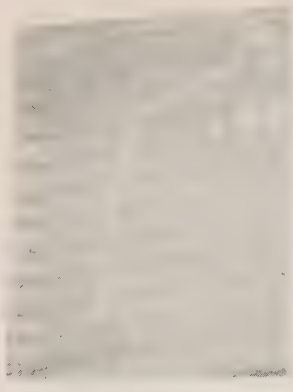
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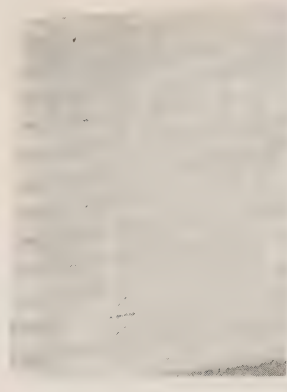
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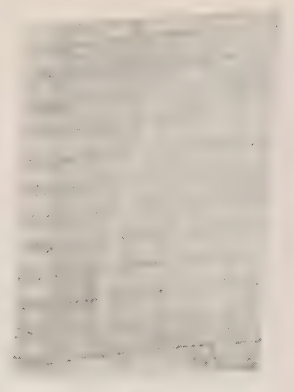
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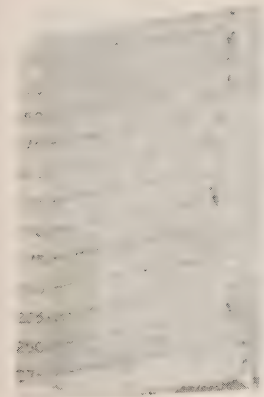
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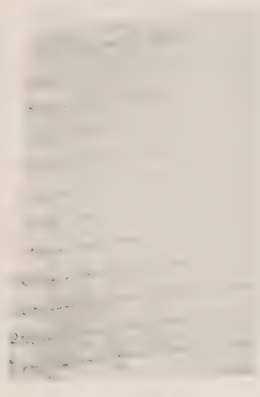
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20



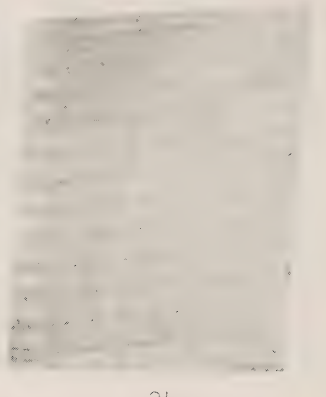
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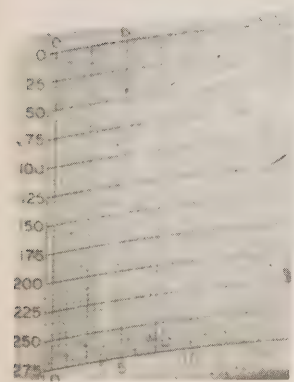
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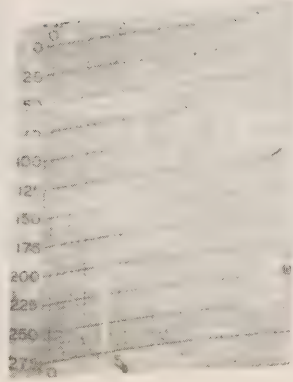
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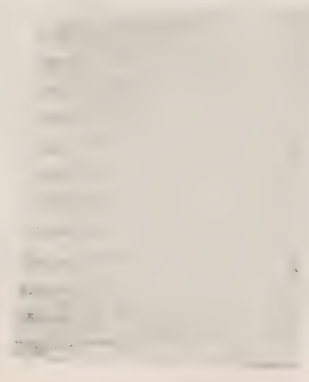
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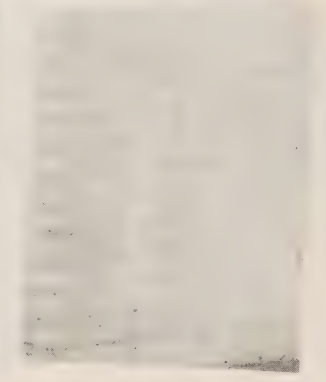
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26



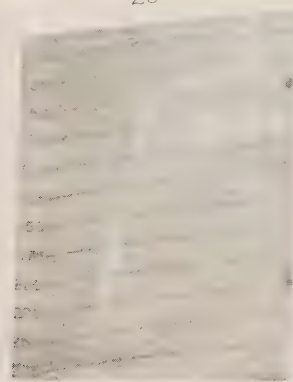
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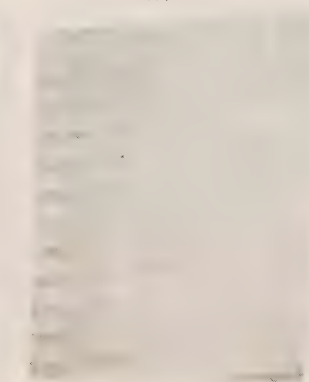
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29



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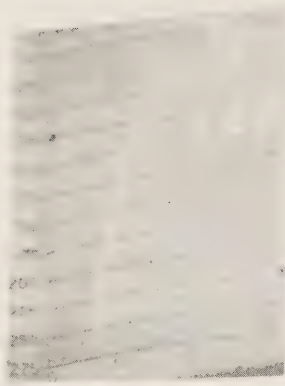
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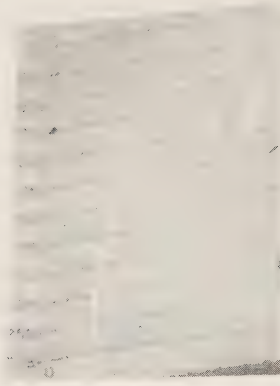
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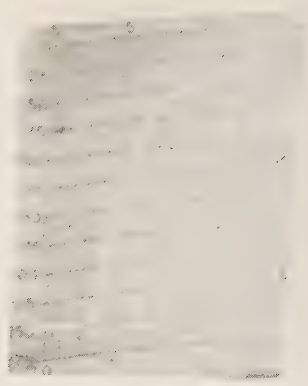
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34



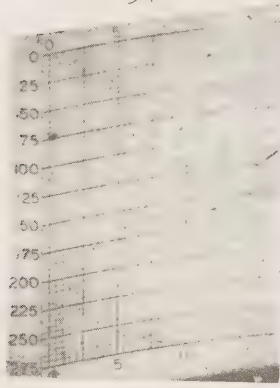
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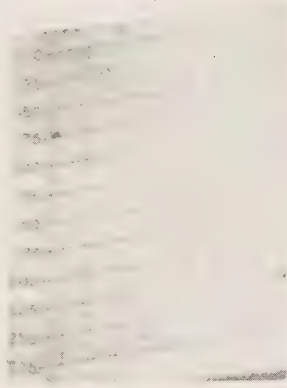
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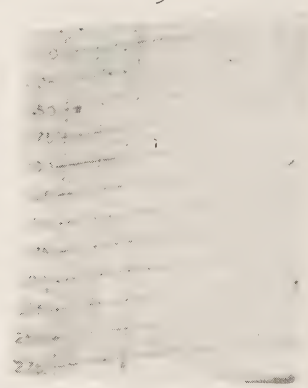
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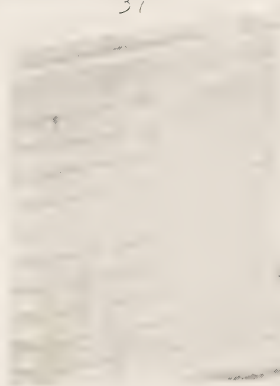
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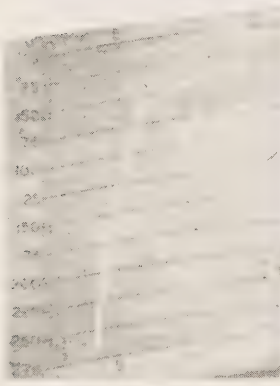
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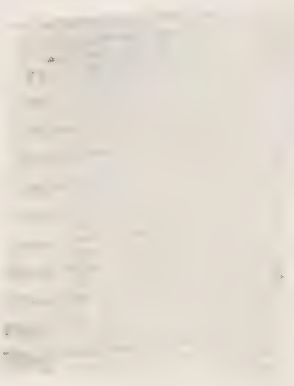
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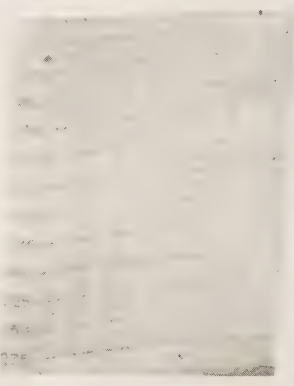
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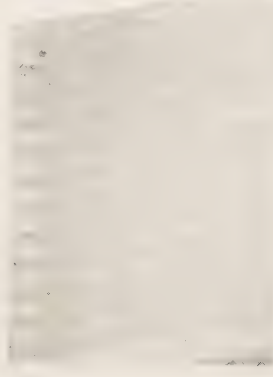
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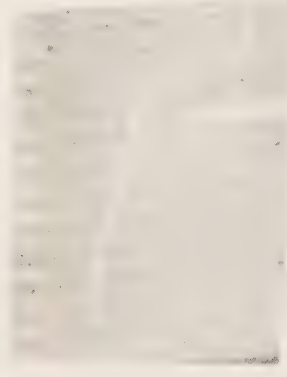
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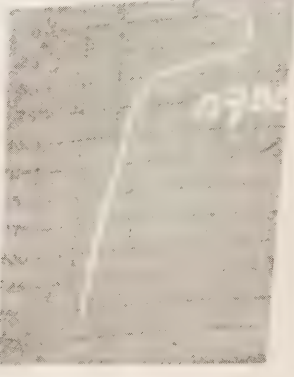
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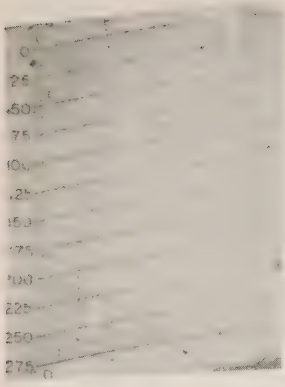
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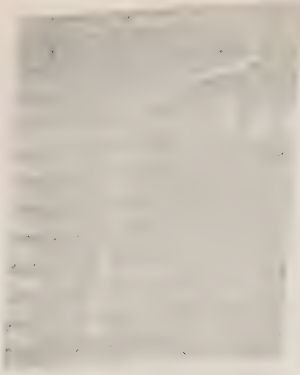
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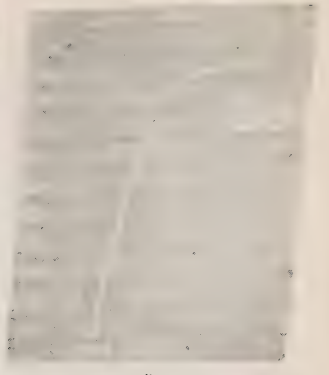
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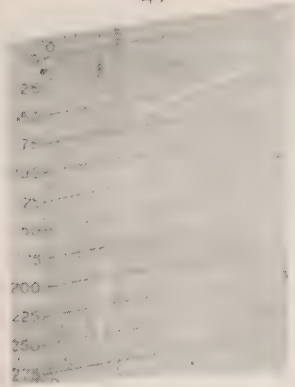
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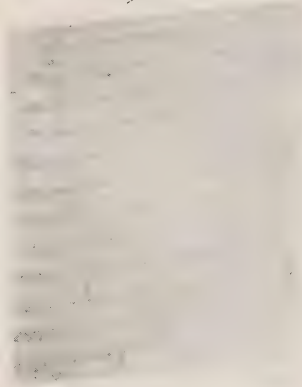
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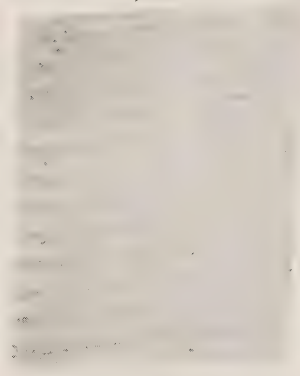
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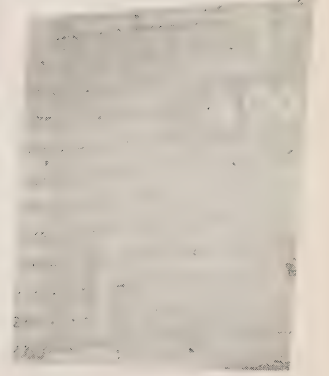
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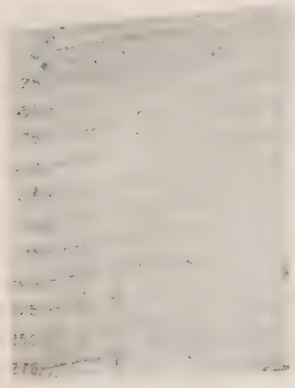
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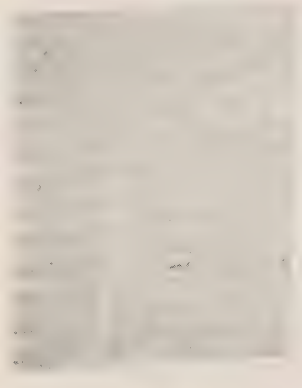
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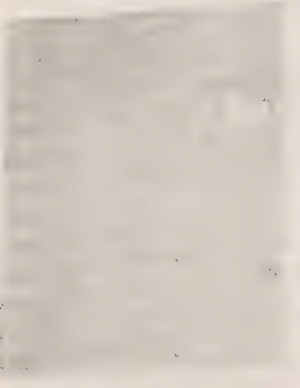
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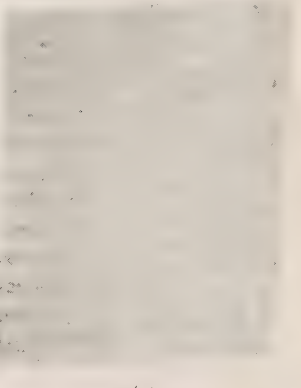
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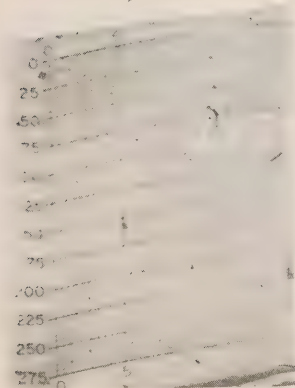
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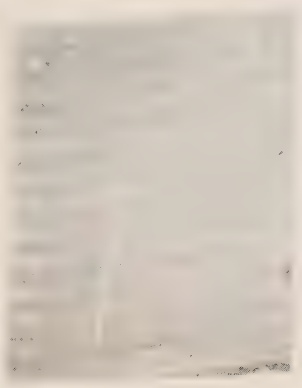
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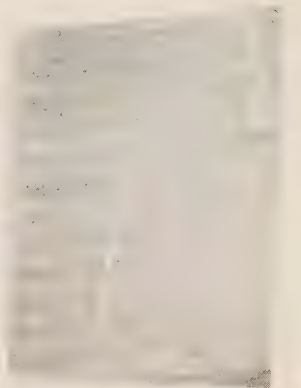
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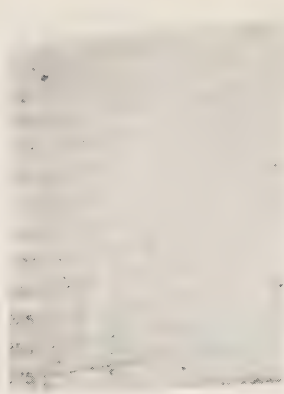
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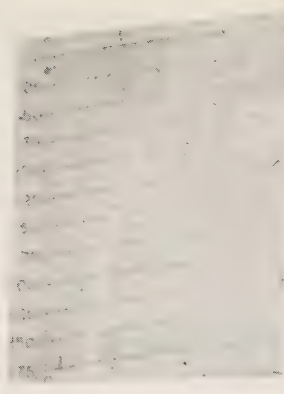
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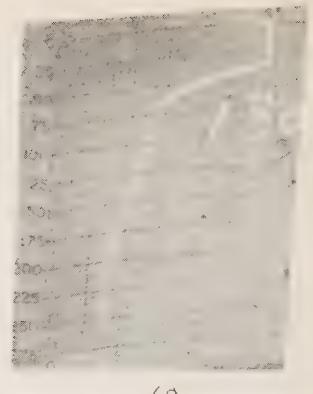
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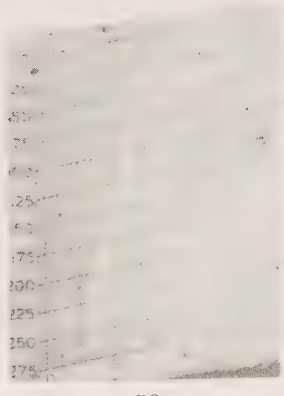
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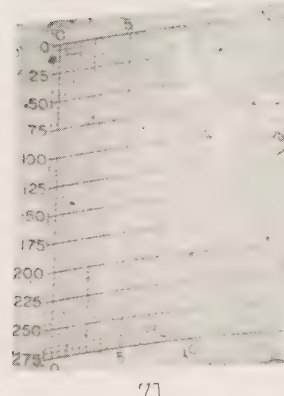
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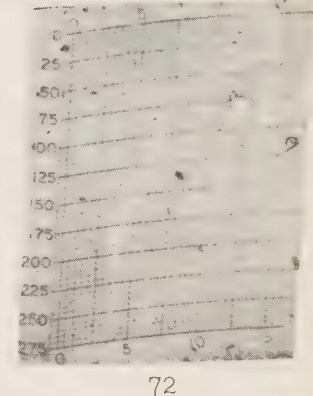
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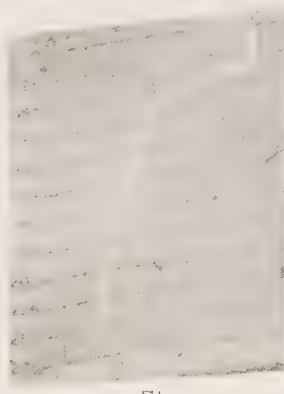
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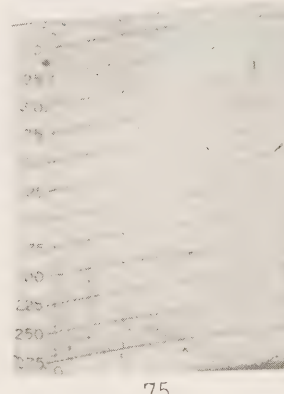
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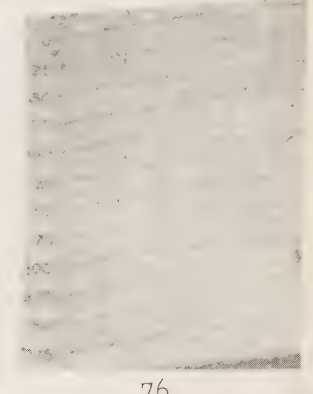
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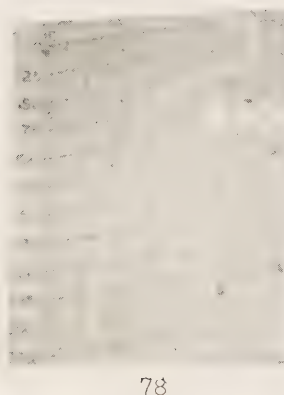
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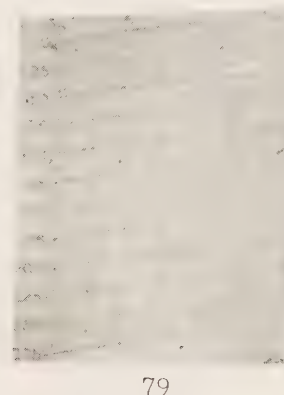
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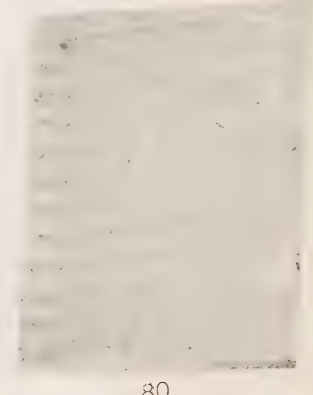
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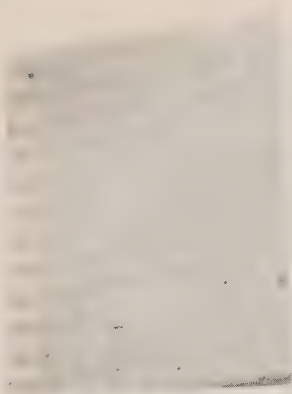
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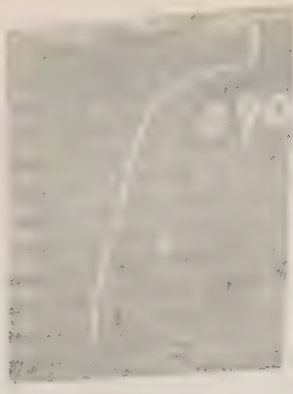
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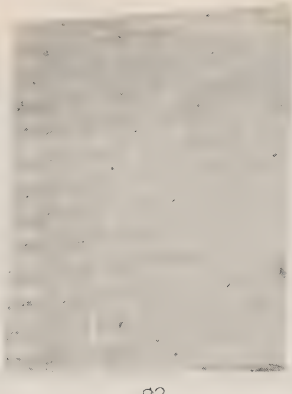
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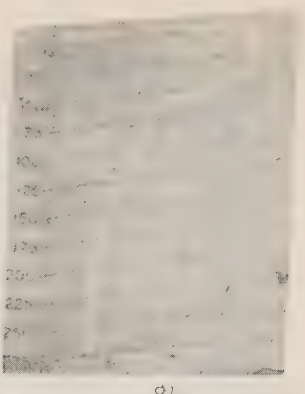
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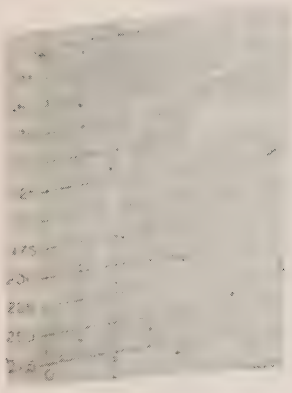
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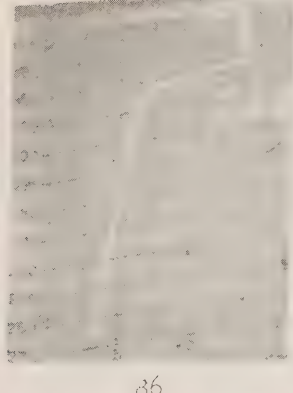
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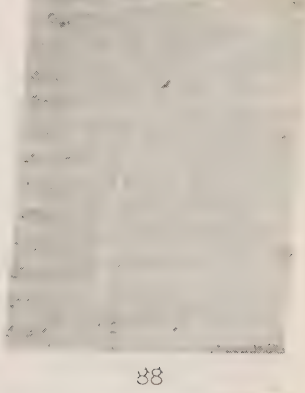
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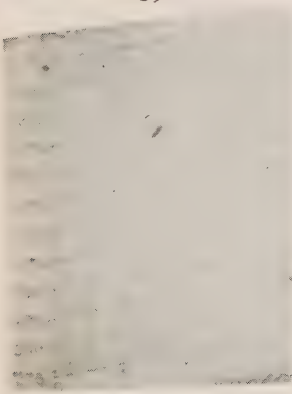
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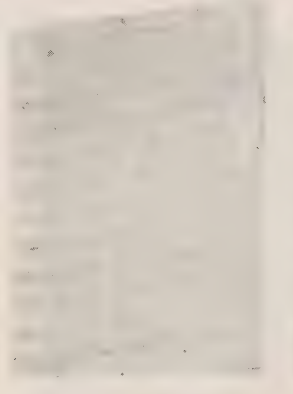
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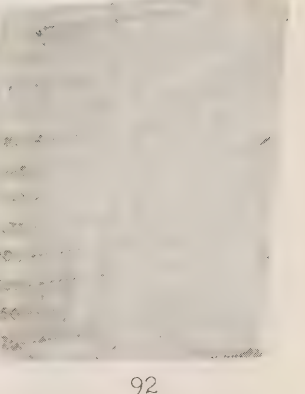
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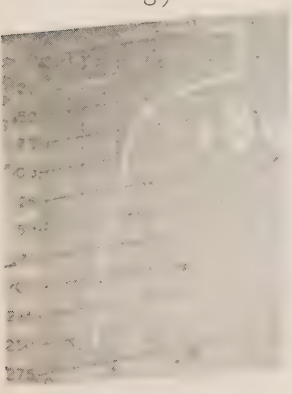
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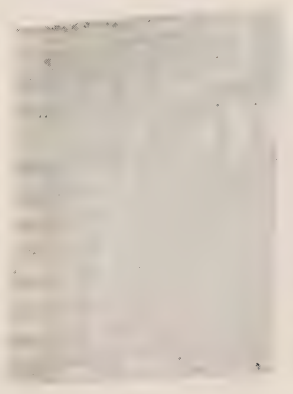
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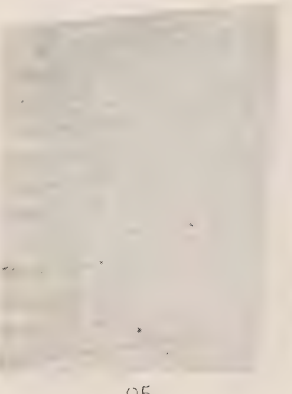
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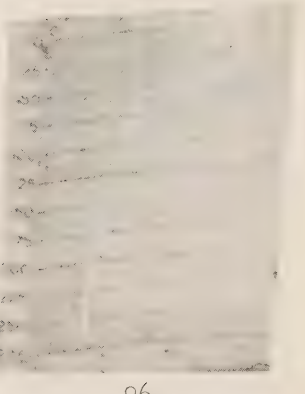
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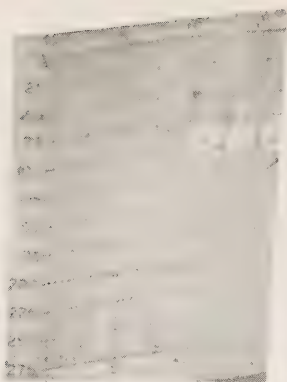
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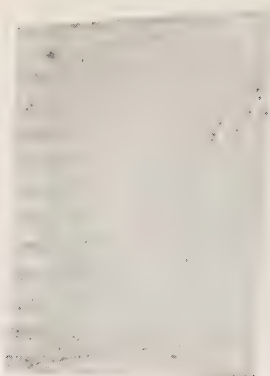
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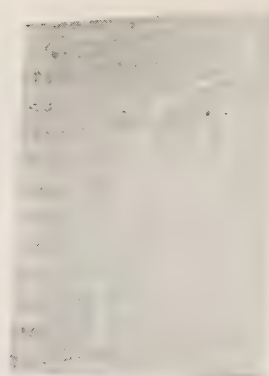
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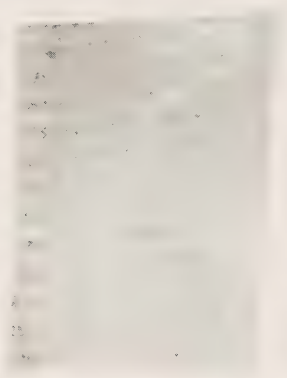
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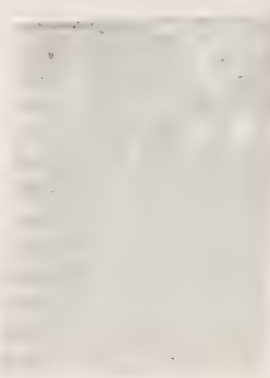
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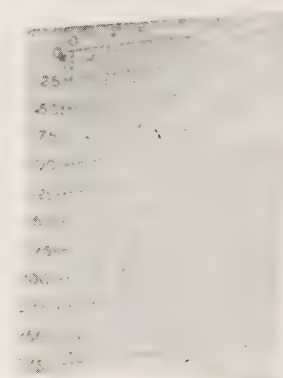
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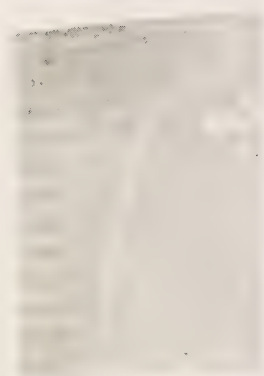
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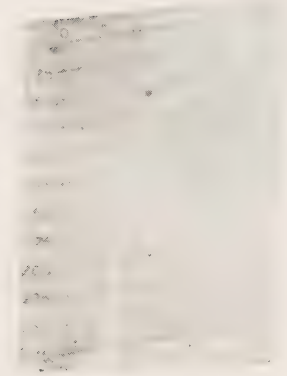
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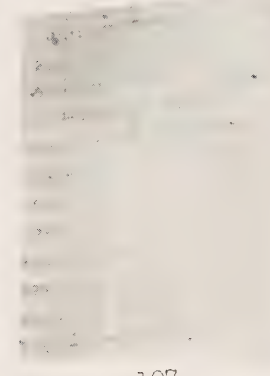
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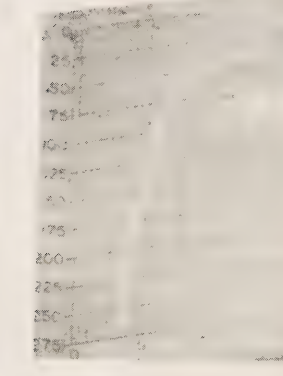
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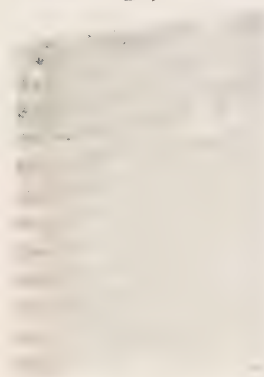
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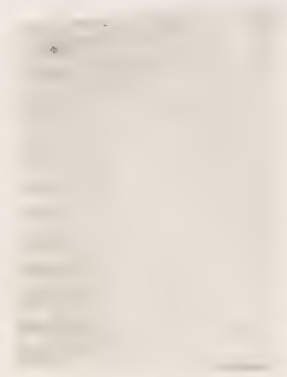
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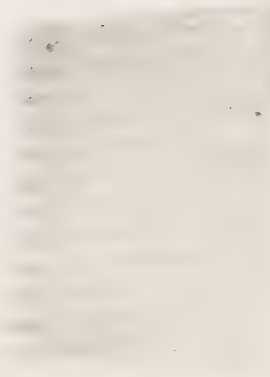
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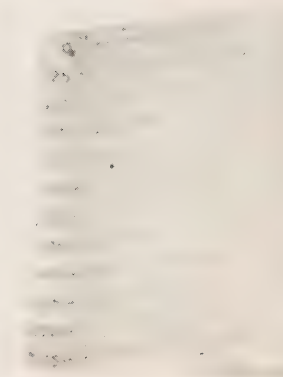
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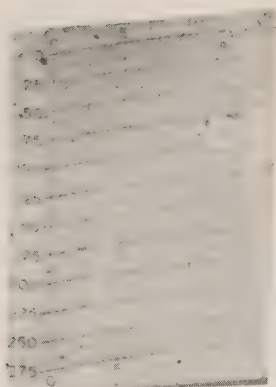
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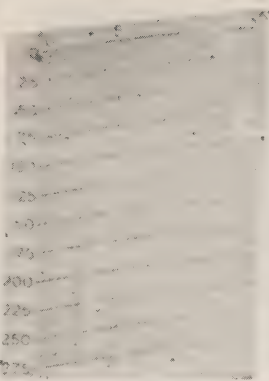
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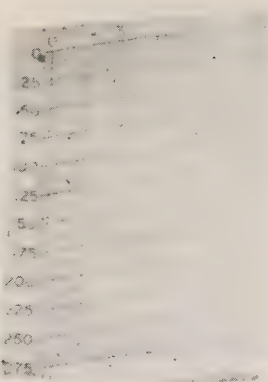
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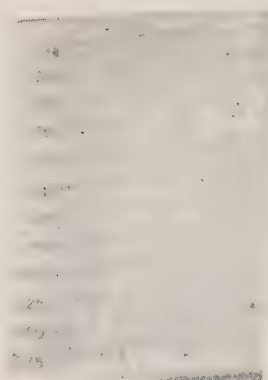
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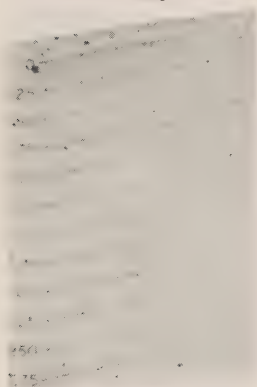
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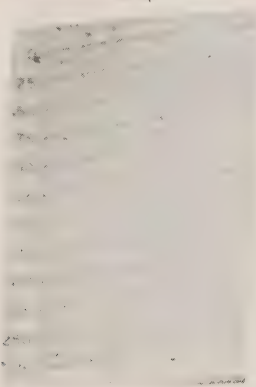
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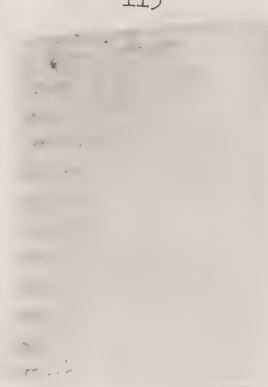
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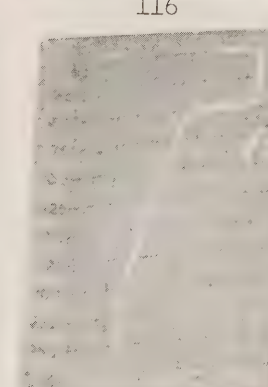
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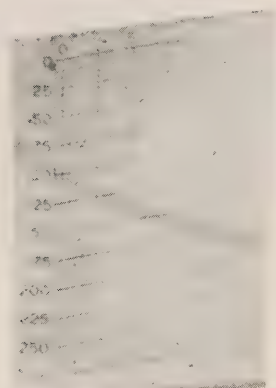
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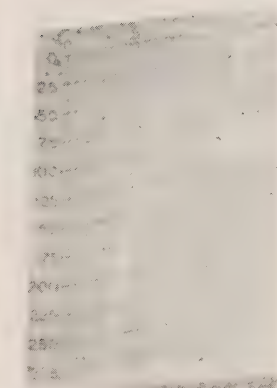
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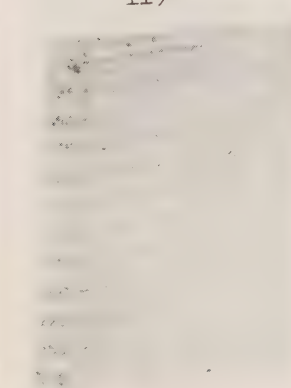
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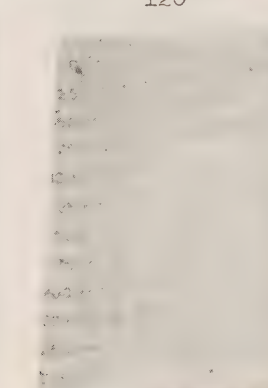
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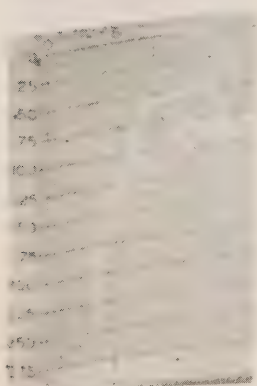
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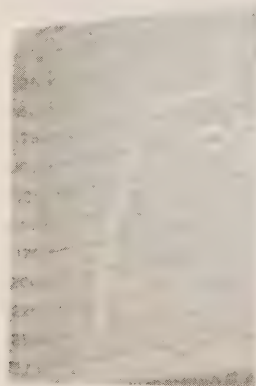
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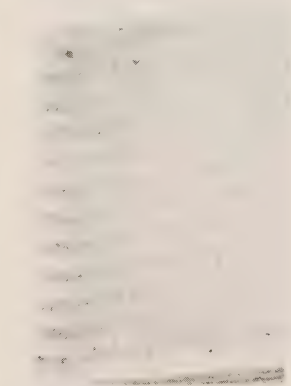
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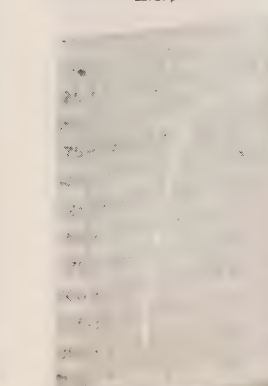
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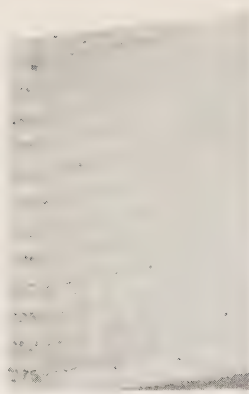
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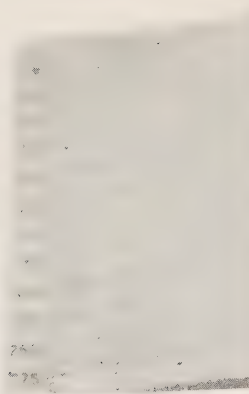
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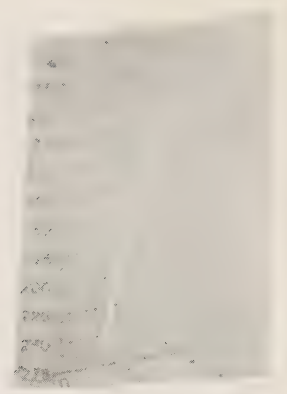
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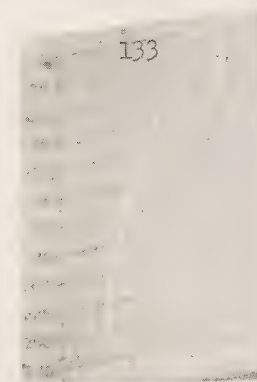
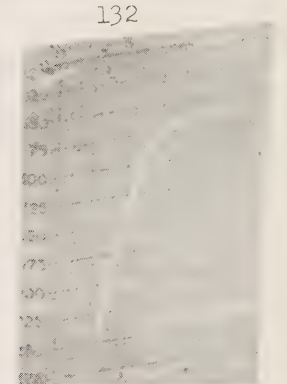
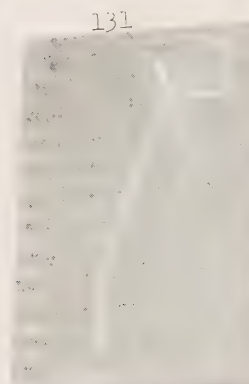
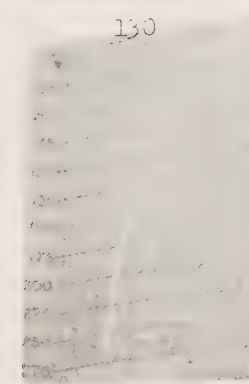
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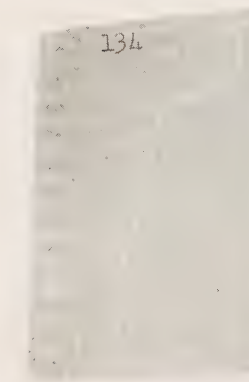
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132



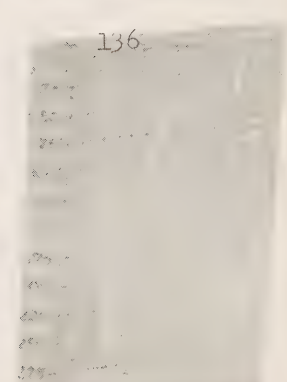
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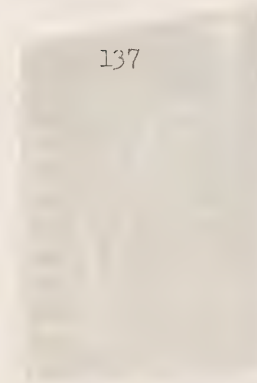
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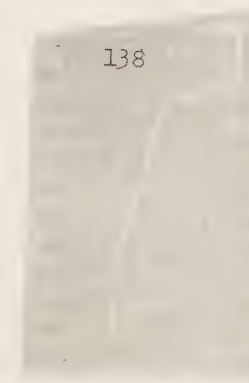
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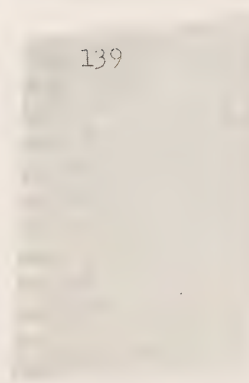
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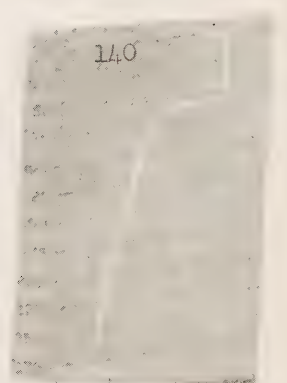
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138



139



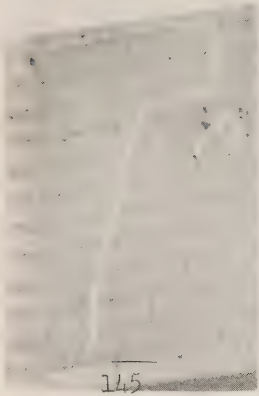
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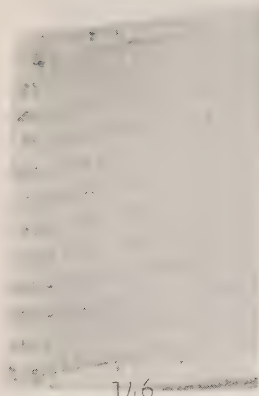
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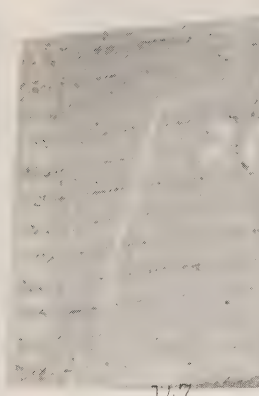
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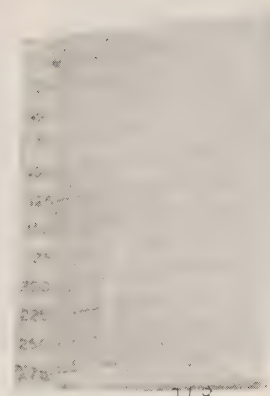
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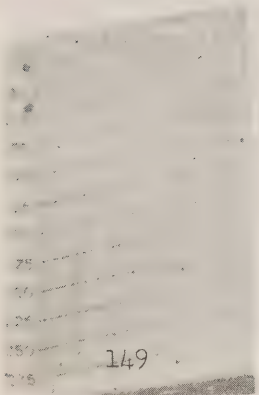
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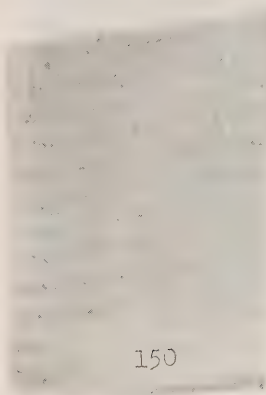
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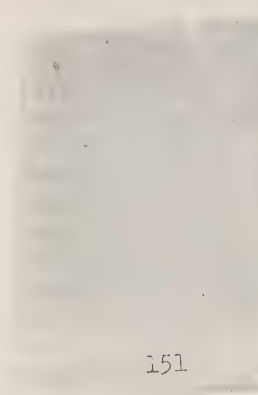
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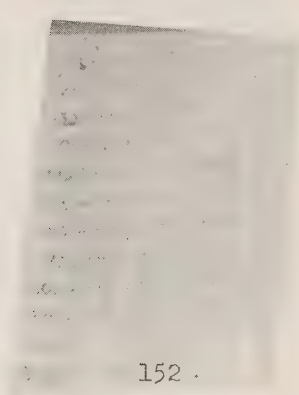
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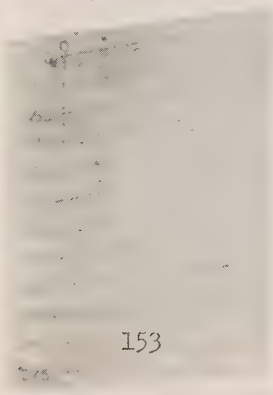
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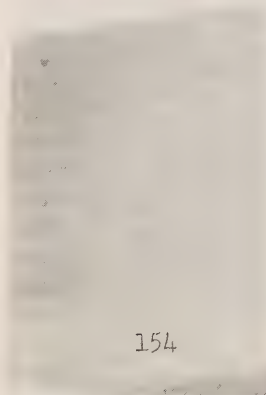
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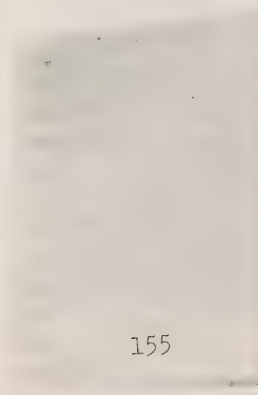
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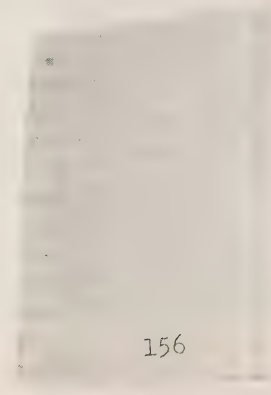
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154



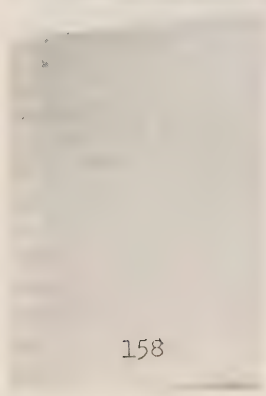
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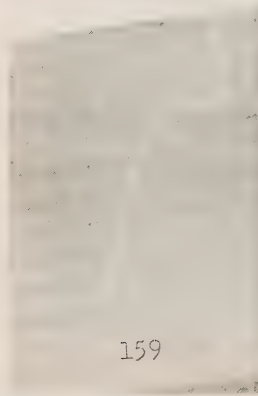
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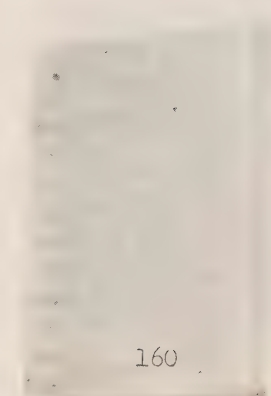
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158



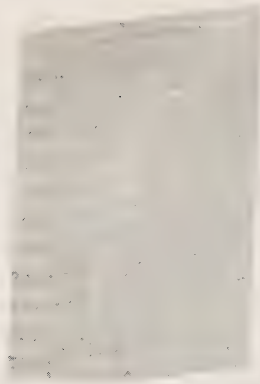
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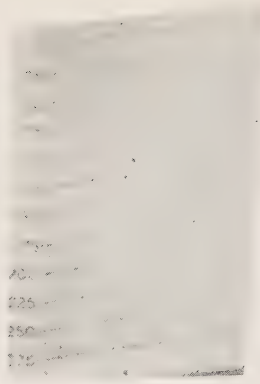
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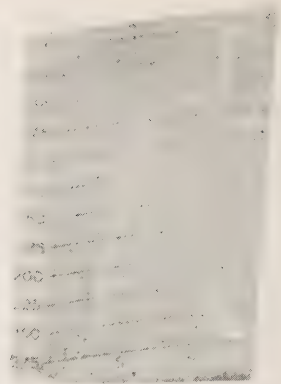
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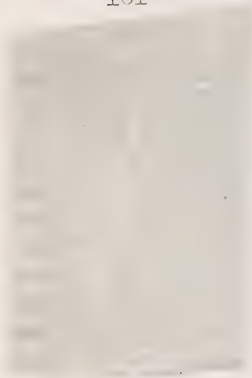
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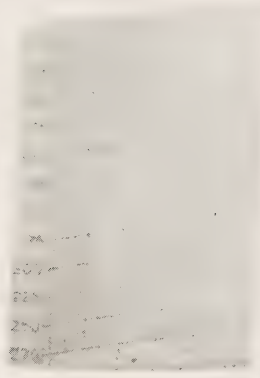
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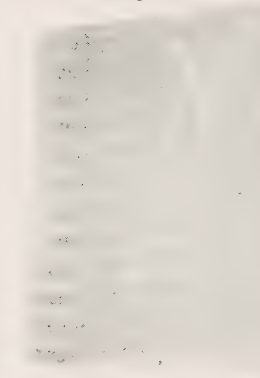
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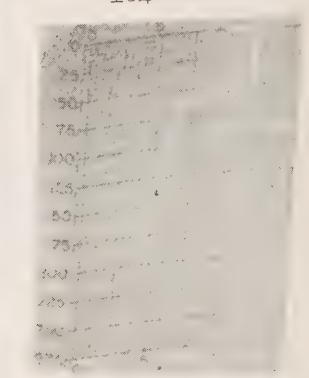
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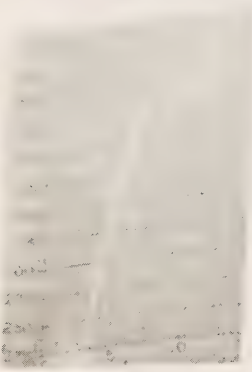
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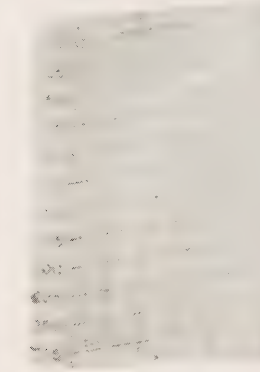
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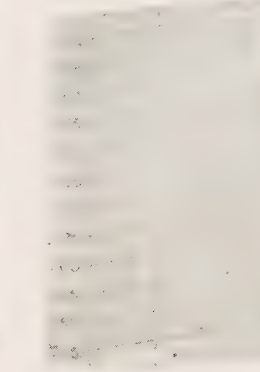
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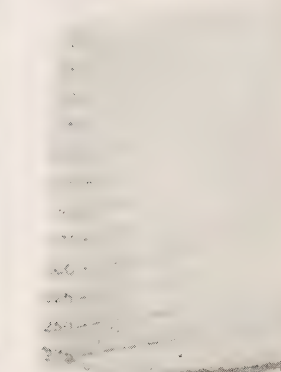
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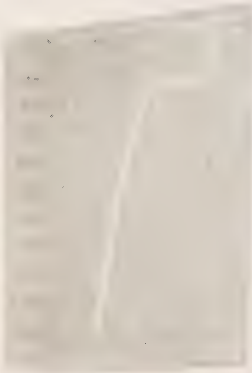
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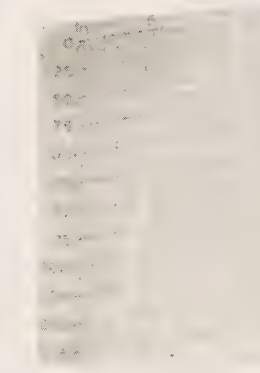
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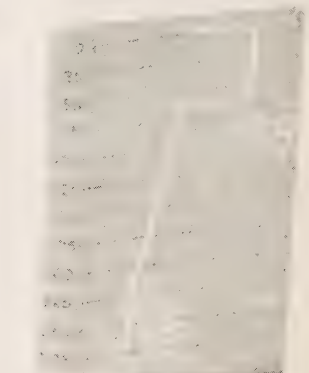
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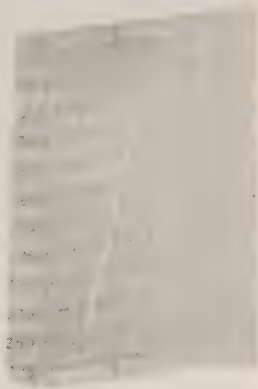
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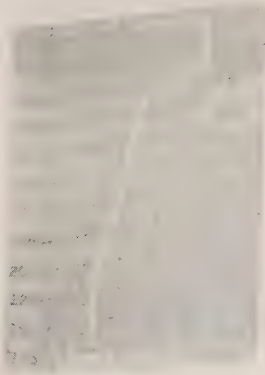
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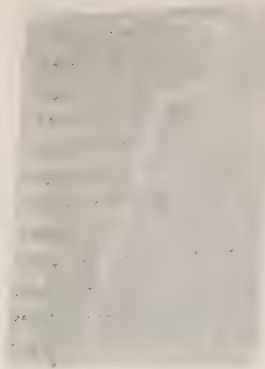
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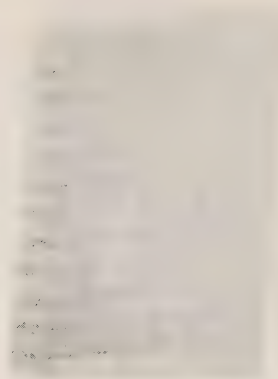
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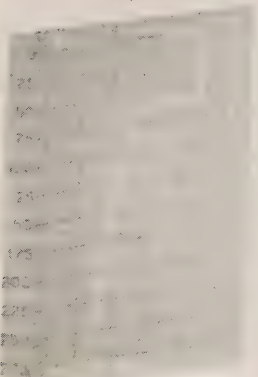
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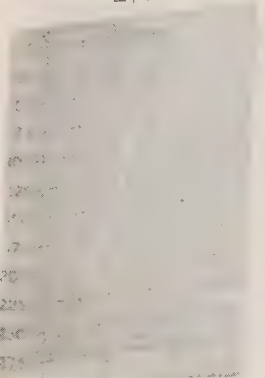
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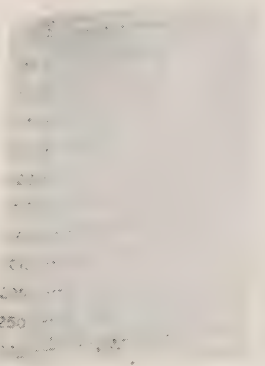
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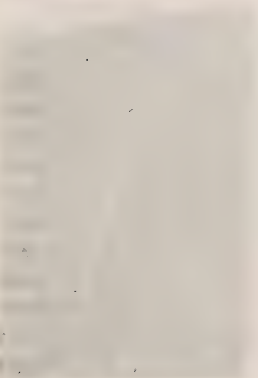
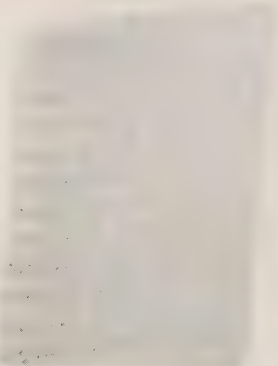
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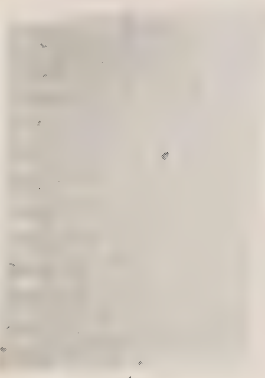
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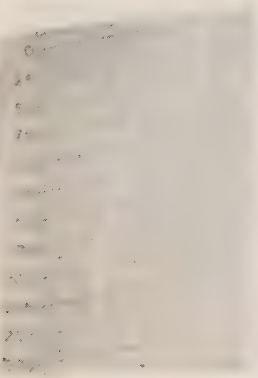
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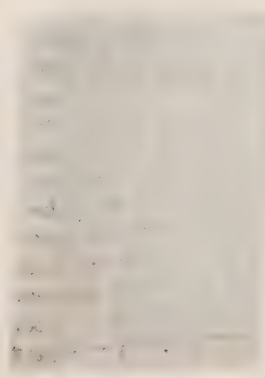
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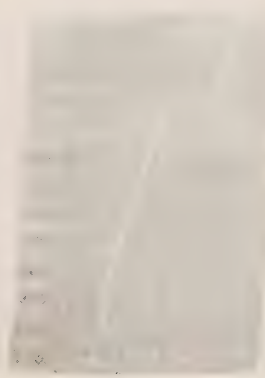
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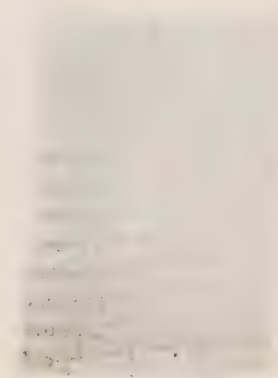
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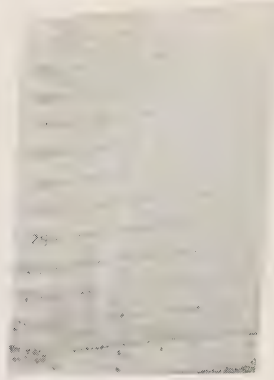
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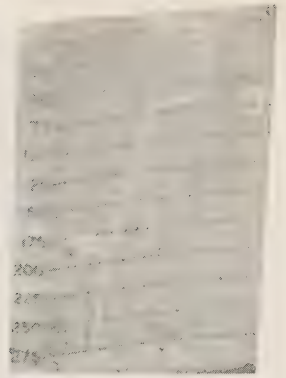
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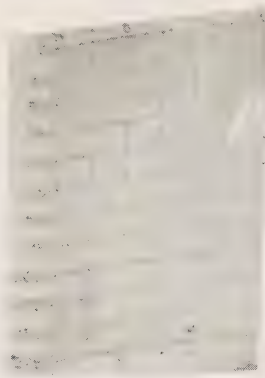
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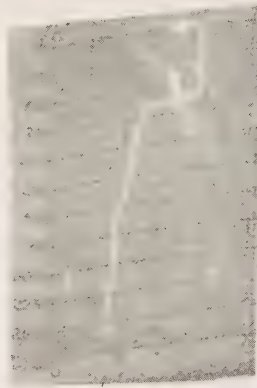
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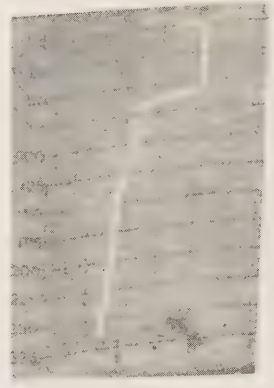
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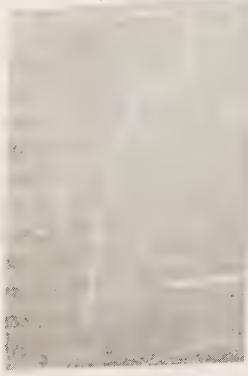
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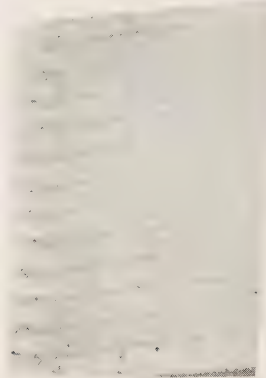
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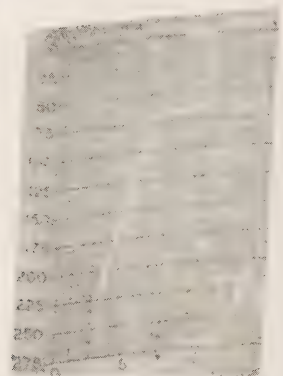
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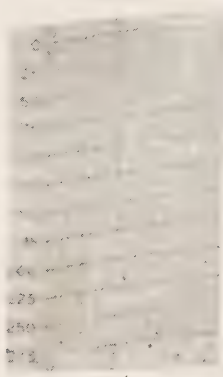
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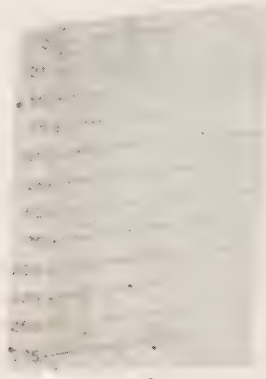
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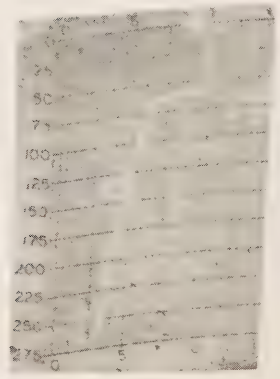
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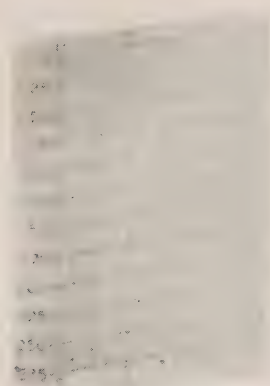
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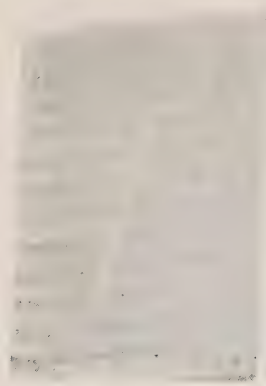
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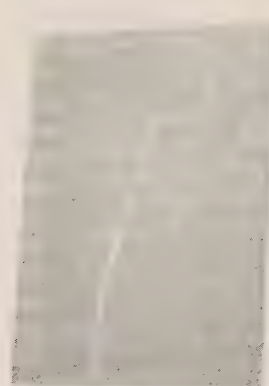
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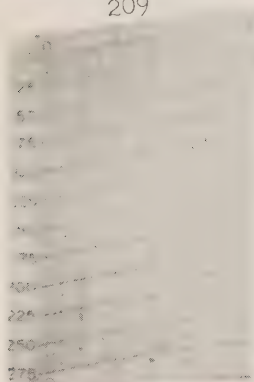
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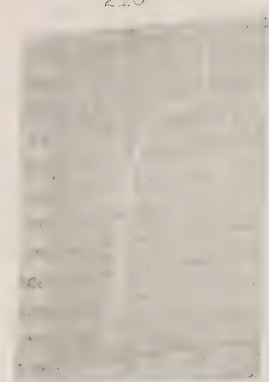
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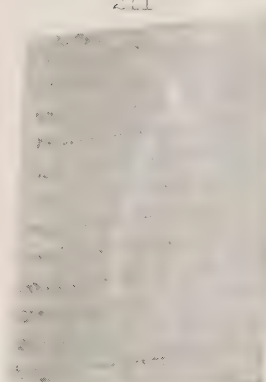
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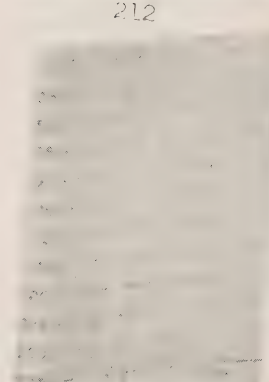
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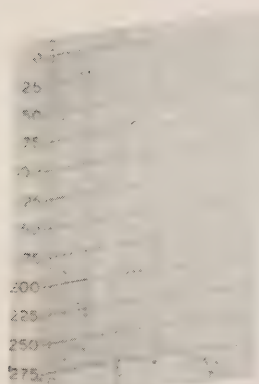
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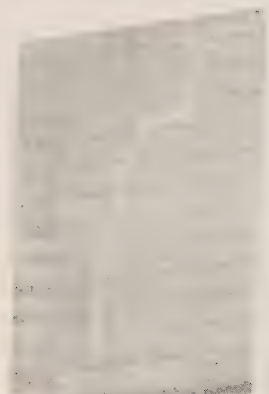
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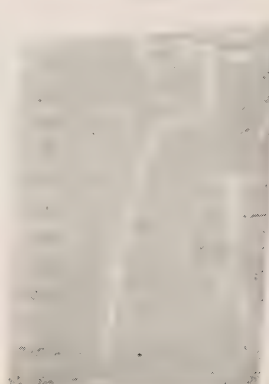
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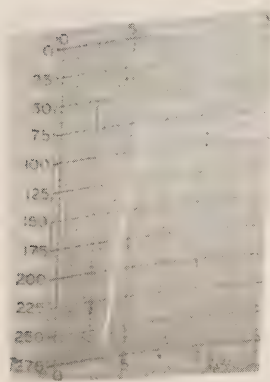
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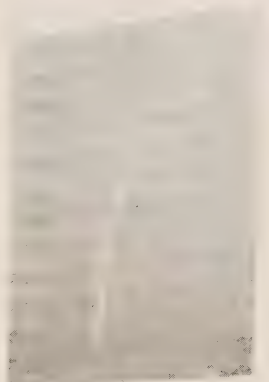
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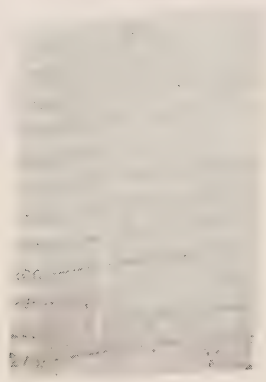
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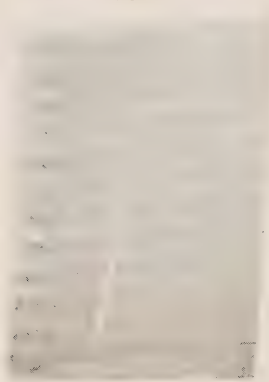
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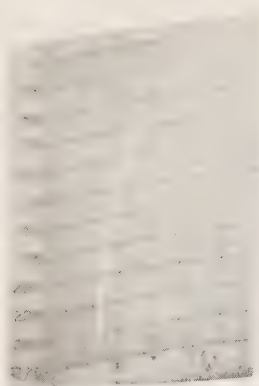
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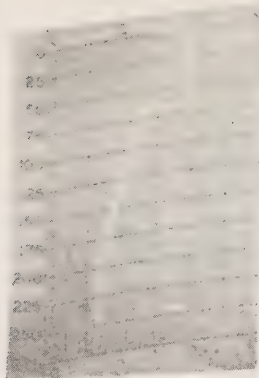
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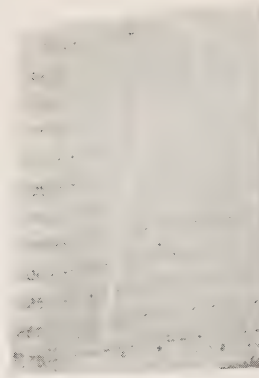
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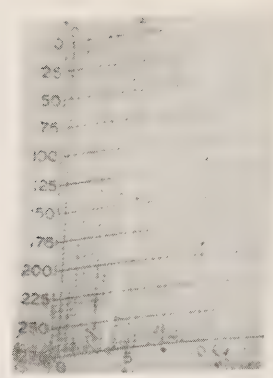
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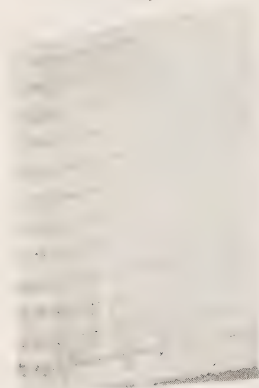
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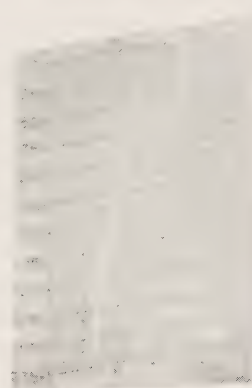
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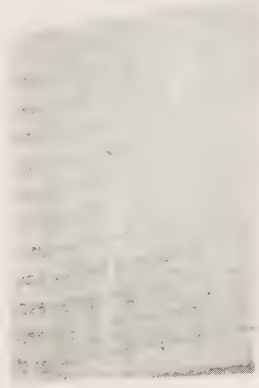
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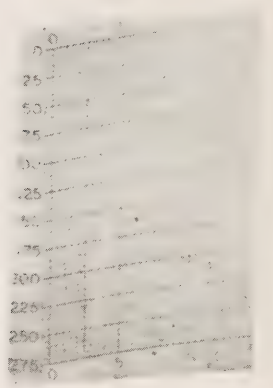
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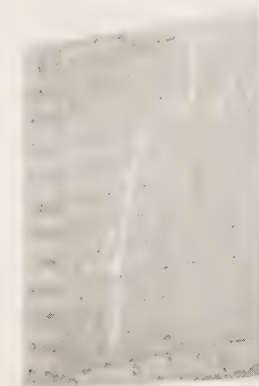
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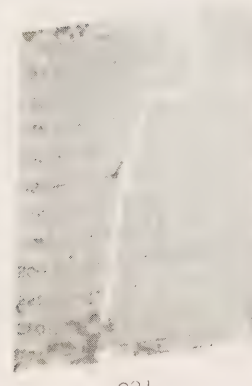
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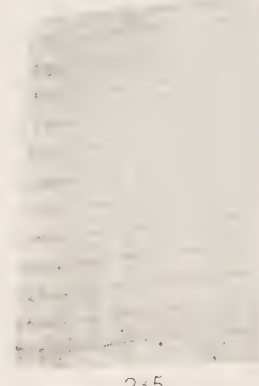
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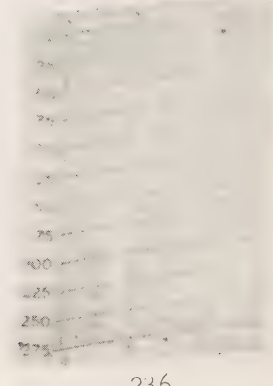
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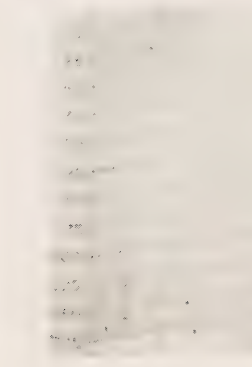
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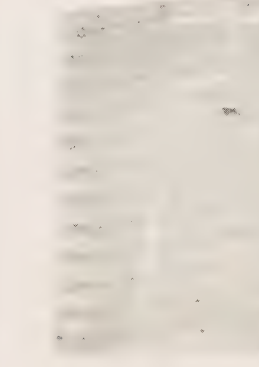
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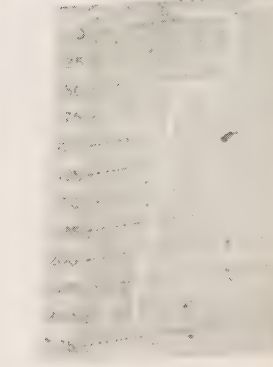
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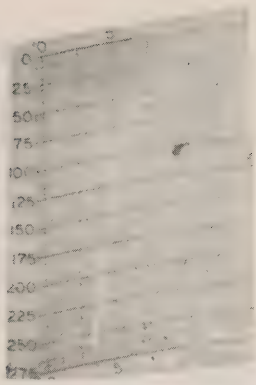
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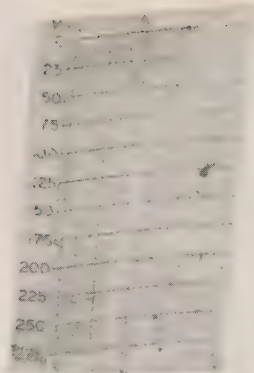
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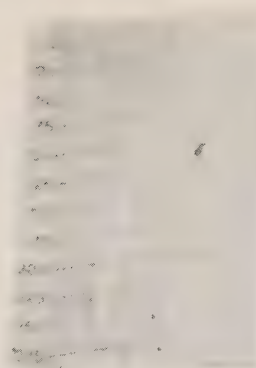
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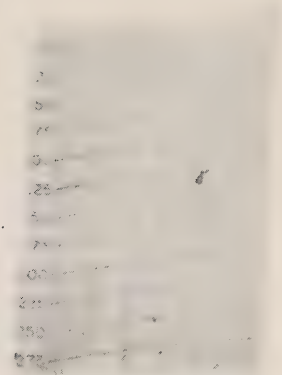
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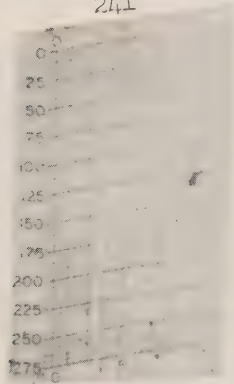
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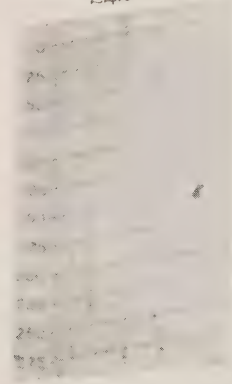
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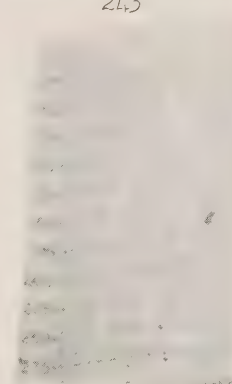
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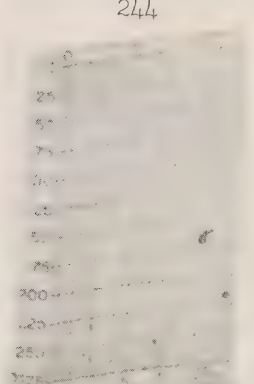
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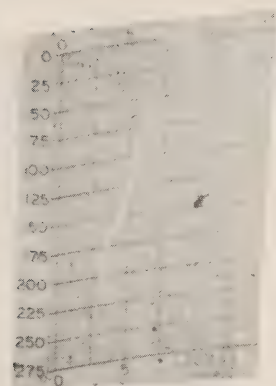
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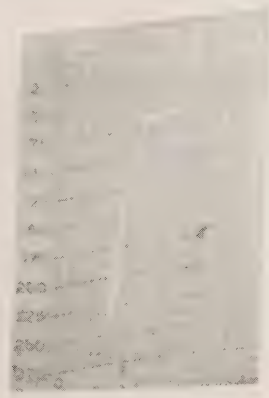
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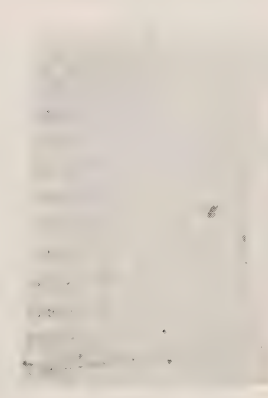
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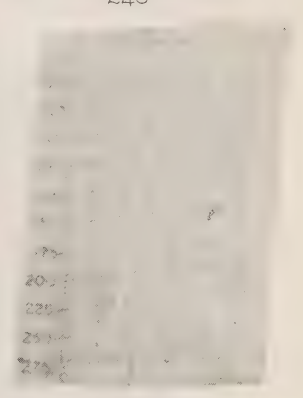
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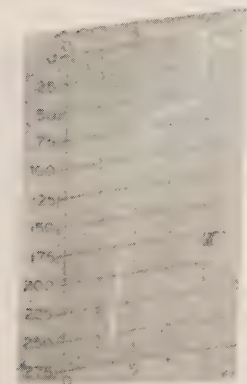
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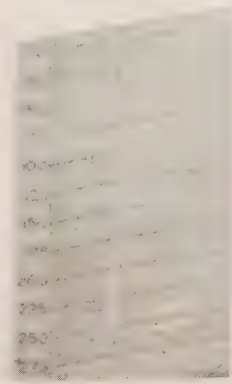
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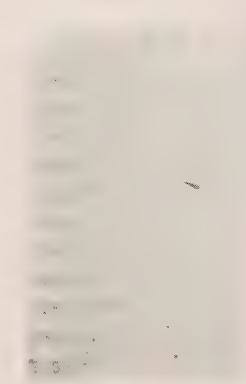
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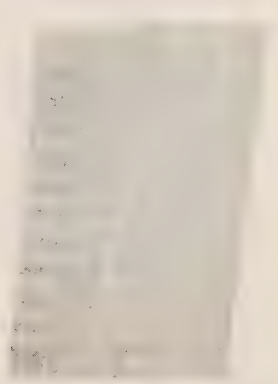
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254



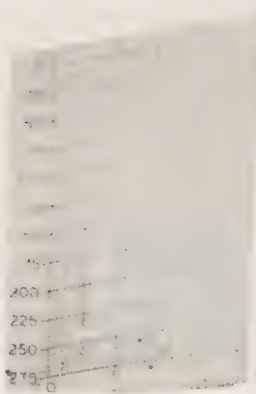
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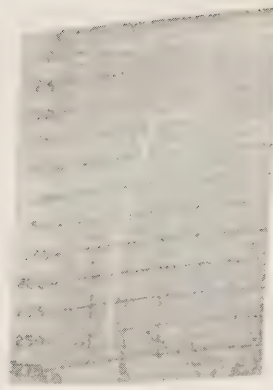
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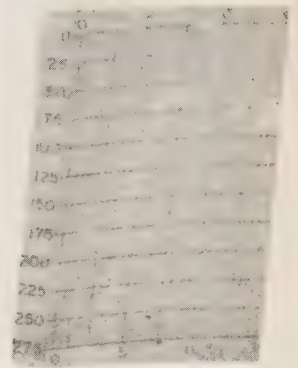
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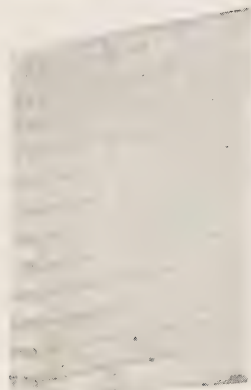
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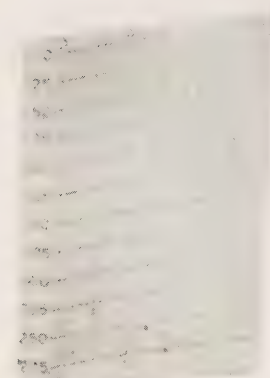
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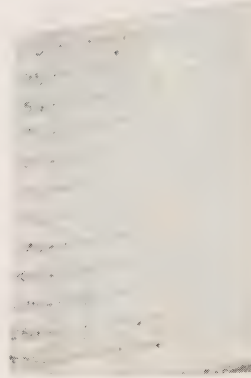
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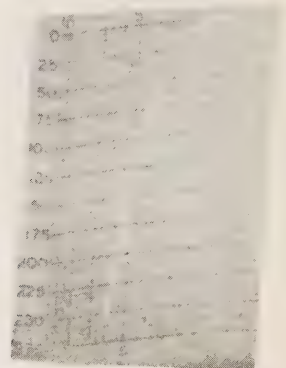
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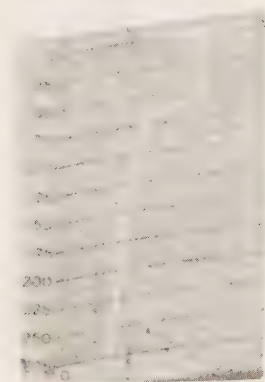
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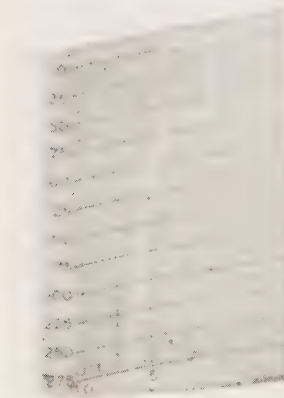
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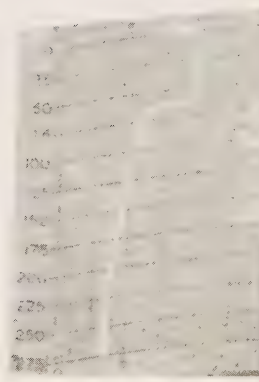
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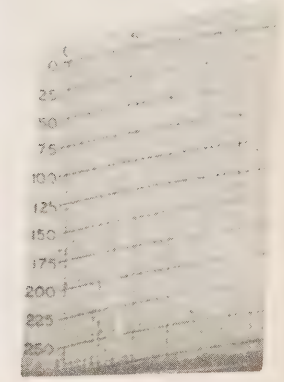
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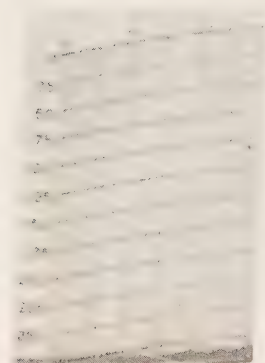
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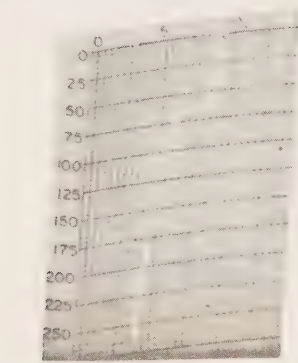
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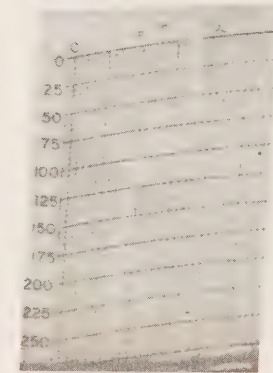
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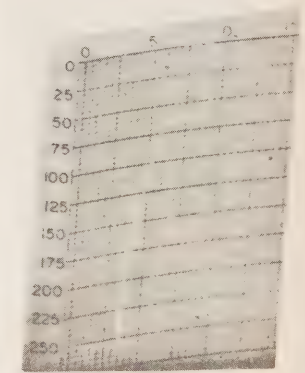
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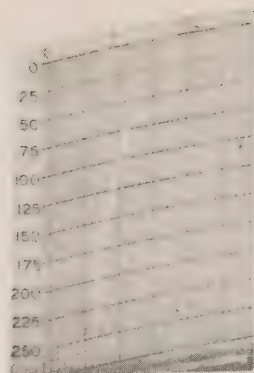
270



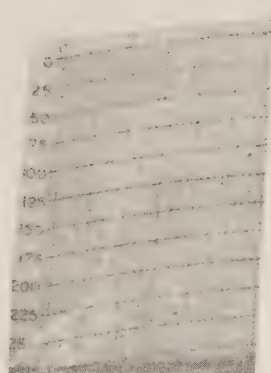
271



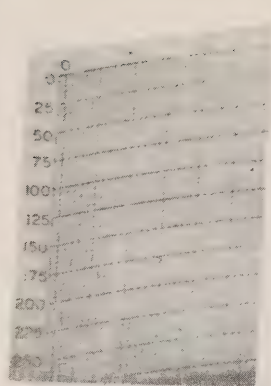
272



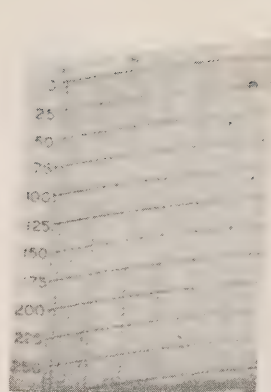
273



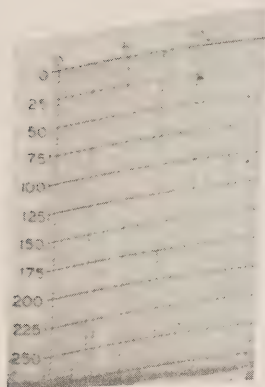
274



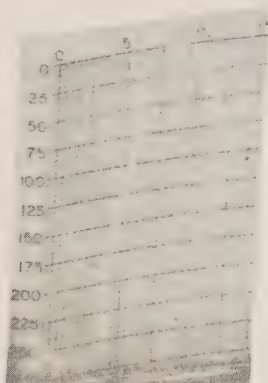
275



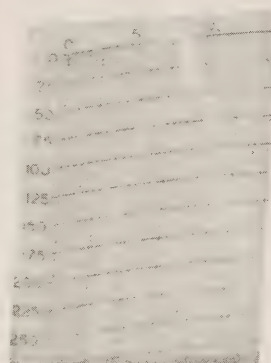
276



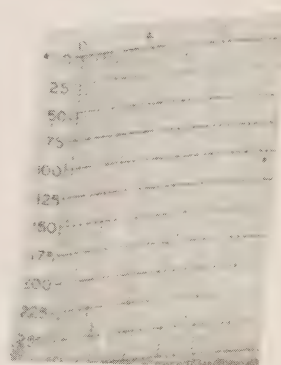
277



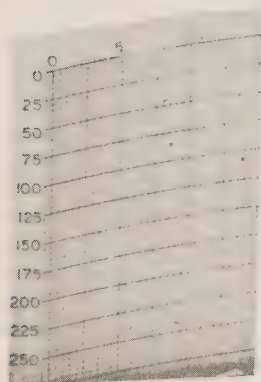
278



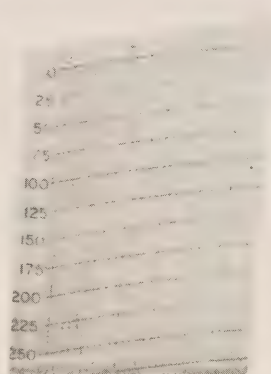
279



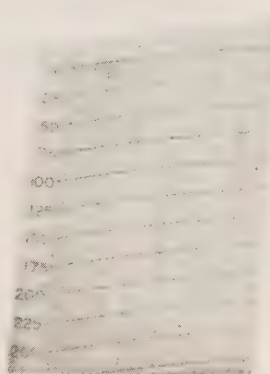
280



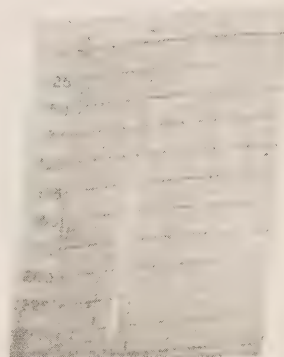
281



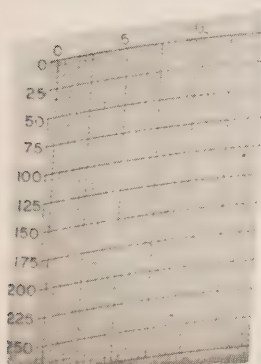
282



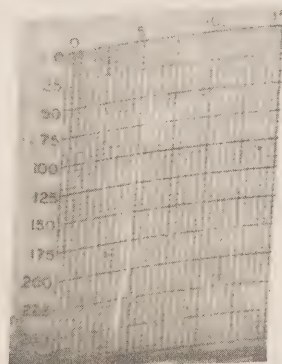
283



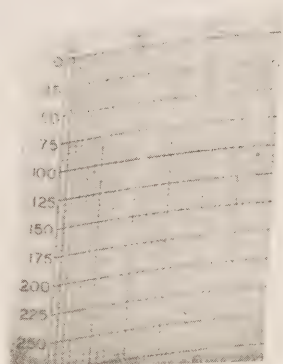
284



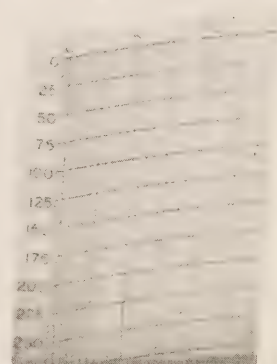
285



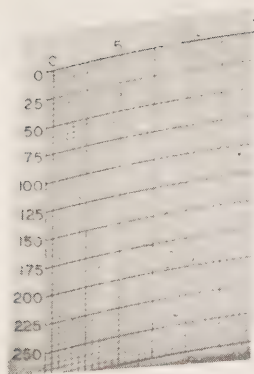
286



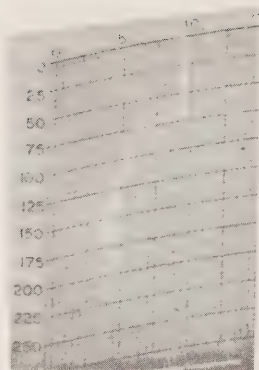
287



288



290



291

CCGS "STONETOWN" Patrol No. 67

BATHYTHERMOGRAMS

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH	BAR	WW	WIND	W I	W-II	CLOUD
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	T A
002	50	01	145	13	03	11	65	21	00	K300						
003	49	58	144	57	04	11	65	00	00	K300						
004	49	57	144	55	04	11	65	03	00	K300						
005	49	50	144	35	04	11	65	06	00	K300						
006	49	50	144	43	04	11	65	09	00	K300						
007	49	56	144	57	04	11	65	12	00	K300						
008	49	59	145	10	04	11	65	15	00	K300						
009	50	08	145	17	04	11	65	18	00	K300						
010	50	13	145	29	04	11	65	21	00	K300						
011	50	23	145	42	05	11	65	00	00	K300						
012	50	07	145	20	05	11	65	03	00	K300						
013	50	03	145	07	05	11	65	06	00	K300						
014	50	06	145	04	05	11	65	09	00	K300						
015	50	02	145	00	05	11	65	12	00	K300						
016	49	58	145	02	05	11	65	15	00	K300						
017	49	53	145	04	05	11	65	18	00	K300						
018	49	51	145	06	05	11	65	21	00	K300						
019	49	50	145	07	06	11	65	00	00	K300						
020	49	50	145	04	06	11	65	03	00	K300						
021	49	46	145	08	06	11	65	06	00	K300						
022	49	41	145	07	06	11	65	09	00	K300						
023	49	45	145	08	06	11	65	12	00	K300						
024	49	55	145	08	06	11	65	15	00	K300						
025	49	56	145	08	06	11	65	18	00	K300						
026	49	59	145	09	06	11	65	21	00	K300						
027	50	05	145	12	07	11	65	00	00	K300						
029	50	18	145	08	07	11	65	06	00	K300	11	02	26	2X	2X	8 5
030	50	06	145	08	07	11	65	09	00	K300	10	02	14	2X	2X	8 7
032	50	03	145	02	07	11	65	15	00	K300	07	03	28	2X	2X	6 7
033	50	05	145	00	07	11	65	18	00	K300	06	61	31	25	2X	7 8

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
034	50	08	144	56	07	11	65	21	00	K300	05	02	28	26	2X		7	8	
035	50	14	144	54	08	11	65	00	00	K300	04	02	28	26	2X		6	8	
036	50	08	144	58	08	11	65	03	00	K300	04	02	27	26	2X		6	8	
037	49	55	145	00	08	11	65	06	00	K300	04	61	18	2X	2X		6	8	
038	49	48	145	02	08	11	65	09	00	K300	03	02	24	2X	2X		6	8	
039	49	55	145	00	08	11	65	12	00	K300	02	02	21	2X	2X		6	8	
040	50	03	144	56	08	11	65	15	00	K300	01	02	22	2X	2X		6	8	
041	50	04	144	54	08	11	65	18	00	K300	01	02	25	24	2X		6	8	
042	50	04	144	52	08	11	65	21	00	K300	01	02	13	22	2X		7	8	
043	50	02	144	51	09	11	65	00	00	K300	01	25	14	23	2X		6	8	
044	50	00	144	48	09	11	65	03	00	K300	01	02	11	2X	2X		6	8	
045	50	04	144	44	09	11	65	06	00	K300	02	02	13	2X	2X		6	8	
046	50	05	144	43	09	11	65	09	00	K300	04	02	14	2X	2X		6	8	
047	50	06	144	44	09	11	65	12	00	K300	05	01	11	2X	2X		6	3	
048	50	07	144	42	09	11	65	15	00	K300	06	03	10	2X	2X		6	5	
049	50	05	144	43	09	11	65	18	00	K300	07	02	08	21	23		6	6	
050	50	06	144	42	09	11	65	21	00	K300	08	02	06	21	23		8	5	
051	50	08	144	47	10	11	65	00	00	K300	09	01	04	20	23		8	1	
052	50	08	144	47	10	11	65	03	00	K300	10	03	07	2X	2X		6	6	
053	50	07	144	49	10	11	65	06	00	K300	11	02	12	2X	2X		6	7	
054	50	06	144	49	10	11	65	09	00	K300	11	61	09	2X	2X		6	8	
055	50	05	144	50	10	11	65	12	00	K300	12	02	13	2X	2X		6	7	
056	50	10	144	50	10	11	65	15	00	K300	13	02	09	2X	2X		6	7	
057	50	08	144	51	10	11	65	18	00	K300	14	61	16	22	2X		6	7	
058	50	02	144	51	10	11	65	21	00	K300	14	02	13	21	2X		8	7	
059	50	00	144	53	11	11	65	00	00	K300	14	25	13	21	2X		6	8	
060	50	00	144	55	11	11	65	03	00	K300	16	80	12	2X	2X		6	8	
061	49	59	144	53	11	11	65	06	00	K300	16	21	15	2X	2X		6	8	
063	49	55	144	56	11	11	65	12	00	K300	18	02	23	2X	2X		6	7	
064	50	13	144	58	11	11	65	15	00	K300	19	01	19	2X	2X		6	6	

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH	BAR	W W	WIND	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	I	A
065	50	10	144	56	11	11	65	18	00	K300	21	02	20	24	2X			7	7
066	50	04	144	55	11	11	65	21	00	K300	21	02	17	22	25			7	7
067	49	35	144	50	12	11	65	00	00	K300	21	02	26	23	25			7	7
068	49	35	144	43	12	11	65	03	00	K300	22	03	29	2X	2X			6	8
069	49	48	144	34	12	11	65	06	00	K300	24	02	27	2X	2X			6	8
070	49	56	144	40	12	11	65	09	00	K300	24	02	22	2X	2X			6	8
071	50	02	144	38	12	11	65	12	00	K300	24	02	19	2X	2X			6	8
072	50	12	144	37	12	11	65	15	00	K300	25	02	16	2X	2X			6	8
073	50	20	144	36	12	11	65	18	00	K300	26	02	21	22	2X			6	8
074	50	13	144	50	12	11	65	21	00	K300	26	25	19	22	2X			8	4
075	50	08	145	10	13	11	65	00	00	K300	25	02	19	23	2X			6	7
076	50	02	145	08	13	11	65	03	00	K300	25	02	17	2X	2X			6	8
077	50	03	145	09	13	11	65	06	00	K300	26	02	18	2X	2X			6	8
078	50	02	145	13	13	11	65	09	00	K300	25	02	22	2X	2X			6	8
079	49	55	145	15	13	11	65	12	00	K300	24	01	28	2X	2X			6	6
080	49	48	145	14	13	11	65	15	00	K300	24	02	29	2X	2X			6	7
081	50	20	145	15	14	11	65	18	00	K300	26	03	28	25	2X			6	7
082	50	11	145	11	14	11	65	21	00	K300	26	02	19	24	2X			6	8
083	50	12	145	07	15	11	65	00	00	K300	25	02	12	23	2X			6	8
084	50	08	145	07	15	11	65	03	00	K300	24	02	15	2X	2X			6	6
085	50	08	145	01	15	11	65	06	00	K300	23	02	19	2X	2X			6	8
086	50	07	144	58	15	11	65	09	00	K300	23	02	18	2X	2X			6	8
087	50	05	144	55	15	11	65	12	00	K300	21	02	21	2X	2X			6	8
088	50	05	144	49	15	11	65	15	00	K300	21	61	24	2X	2X			6	8
089	50	06	144	44	15	11	65	18	00	K300	21	21	21	22	24			6	8
090	50	03	144	41	15	11	65	21	00	K300	22	02	22	24	25			6	8
091	49	59	144	43	16	11	65	00	00	K300	21	02	22	23	26			8	6
092	50	01	145	01	16	11	65	06	00	K300	20	27	22	2X	2X			8	1
093	50	04	145	15	16	11	65	09	00	K300	20	02	20	2X	2X			8	2
094	49	56	145	27	16	11	65	12	00	K300	18	02	19	2X	2X			8	2

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Aml	W-1		W-11		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
095	49	53	145	37	16	11	65	15	00	K300	18	02	22	2X	2X	8	3		
096	50	06	145	55	17	11	65	18	00	K300	15	16	21	23	25	8	7		
097	50	01	145	50	17	11	65	21	00	K300	12	15	26	24	23	9	4		
098	50	03	145	18	18	11	65	00	00	K300	08	02	13	22	24	8	7		
099	49	58	145	03	18	11	65	03	00	K300	08	02	19	2X	2X	8	6		
100	49	49	144	49	18	11	65	06	00	K300	10	01	24	2X	2X	8	3		
101	49	48	144	48	18	11	65	09	00	K300	13	81	19	2X	2X	8	6		
102	49	47	144	47	18	11	65	12	00	K300	14	01	22	2X	2X		0		
103	49	48	144	48	18	11	65	15	00	K300	14	61	21	2X	2X	6	8		
104	49	43	144	46	18	11	65	18	00	K300	16	02	23	24	2X	8	3		
105	49	45	144	51	18	11	65	21	00	K300	17	02	25	24	2X	8	4		
106	49	50	144	57	19	11	65	00	00	K300	16	01	25	24	2X	8	5		
107	49	52	145	03	19	11	65	03	00	K300	17	02	23	2X	2X	8	6		
108	49	56	145	10	19	11	65	06	00	K300	18	03	20	2X	2X	6	8		
109	49	54	145	21	19	11	65	09	00	K300	18	51	28	2X	2X	7	8		
110	49	56	145	32	19	11	65	12	00	K300	17	02	30	2X	2X	7	8		
111	50	01	145	40	19	11	65	15	00	K300	18	02	31	2X	2X	7	8		
112	50	10	145	40	19	11	65	18	00	K300	18	10	29	24	2X	7	8		
113	50	06	145	08	19	11	65	21	00	K300	18	02	25	24	2X	7	8		
114	50	01	144	52	20	11	65	00	00	K300	18	51	26	24	2X	7	8		
115	50	03	145	02	20	11	65	03	00	K300	17	02	25	2X	2X	7	8		
116	50	06	145	12	20	11	65	06	00	K300	17	51	30	2X	2X	7	8		
117	50	03	145	17	20	11	65	09	00	K300	17	01	40	2X	2X	7	3		
118	50	12	145	07	23	11	65	18	00	K300	19	51	05	21	24	8	8		
119	50	07	145	04	23	11	65	21	00	K300	19	20	00	20	23	6	8		
120	50	10	145	00	24	11	65	00	00	K300	18	51	03	20	22	4	8		
121	50	09	145	00	24	11	65	03	00	K300	18	51	07	2X	2X	7	8		
122	50	12	145	01	24	11	65	06	00	K300	18	52	12	2X	2X	7	8		
123	50	08	145	00	24	11	65	09	00	K300	16	52	10	2X	2X	7	8		
124	50	12	145	01	24	11	65	12	00	K300	15	61	07	2X	2X	4	8		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH	BAR	WW	WIND	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
125	50	13	144	59	24	11	65	15	00	K300	13	61	12	2X		2X		4	8
126	50	14	144	56	24	11	65	18	00	K300	12	61	14	23		22		4	8
127	50	14	144	56	24	11	65	21	00	K300	12	61	16	23		22		4	8
128	50	10	144	51	25	11	65	00	00	K300	10	61	18	23		2X		4	8
129	50	11	144	49	25	11	65	03	00	K300	09	61	16	2X		2X		4	8
130	50	12	144	45	25	11	65	06	00	K300	08	02	22	2X		2X		7	8
131	50	15	144	37	25	11	65	09	00	K300	07	02	21	2X		2X		7	8
132	50	10	144	40	25	11	65	12	00	K300	05	02	31	2X		2X		7	8
133	50	02	144	54	25	11	65	15	00	K300	07	61	33	2X		2X		6	8
134	49	54	145	23	27	11	65	18	00	K300	-94	16	26	29		2X		7	8
135	49	56	145	00	27	11	65	21	00	K300	-92	80	22	25		29		6	8
136	49	59	145	00	28	11	65	00	00	K300	-85	21	22	24		28		6	8
137	49	55	145	01	28	11	65	03	00	K300	-79	02	28	2X		2X		6	8
138	49	47	145	00	28	11	65	06	00	K300	-79	02	27	2X		2X		6	8
139	49	42	145	07	28	11	65	09	00	K300	-80	51	18	2X		2X		7	8
140	50	00	145	06	28	11	65	18	00	K300	-86	02	26	25		23		8	7
141	50	06	145	20	28	11	65	21	00	K300	-89	25	23	25		23		8	7
142	50	11	145	29	29	11	65	00	00	K300	-89	01	25	26		23		6	8
143	50	09	145	12	29	11	65	03	00	K300	-91	02	22	2X		2X		8	4
144	49	58	145	01	29	11	65	06	00	K300	-92	02	20	2X		2X		6	3
145	49	56	144	59	29	11	65	09	00	K300	-94	01	22	2X		2X			0
146	49	53	144	56	29	11	65	12	00	K300	-95	02	22	2X		2X			0
147	50	00	145	00	29	11	65	15	00	K300	-95	02	22	2X		2X			0
148	50	02	145	12	29	11	65	18	00	K300	-92	16	16	20		24		6	7
149	49	59	145	28	29	11	65	21	00	K300	-86	16	23	22		23		6	8
150	50	05	145	32	30	11	65	00	00	K300	-79	21	38	25		25		6	8
151	50	08	145	15	30	11	65	03	00	K300	-75	02	20	2X		2X		6	7
152	50	05	144	56	30	11	65	06	00	K300	-75	61	21	2X		2X		6	8
153	49	50	144	43	30	11	65	09	00	K300	-81	02	22	2X		2X		6	7
154	50	03	144	50	30	11	65	15	00	K300	-90	02	30	2X		2X		6	8

TABLE I

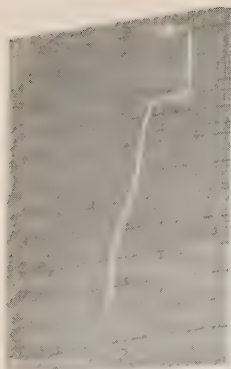
CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
155	50	03	144	56	30	11	65	18	00	K300	-93	15	17	22	25	8	6		
156	49	56	145	08	30	11	65	21	00	K300	-94	02	14	22	23	8	6		
157	50	08	145	30	01	12	65	00	00	K300	-93	02	06	22	23	7	7		
158	50	06	145	10	01	12	65	03	00	K300	-94	02	05	2X	2X	7	7		
159	50	00	144	51	01	12	65	06	00	K300	-95	02	04	2X	2X	8	7		
160	49	58	144	51	01	12	65	09	00	K300	-97	02	04	2X	2X	8	5		
161	50	02	144	50	01	12	65	12	00	K300	-98	02	10	2X	2X	6	6		
162	49	58	144	47	01	12	65	15	00	K300	01	02	12	2X	2X	6	6		
163	50	00	144	41	01	12	65	18	00	K300	03	25	08	20	24	9	3		
164	49	55	144	39	01	12	65	21	00	K300	05	85	08	20	23	9	7		
165	49	55	144	45	02	12	65	00	00	K300	05	02	23	22	23	9	5		
166	50	05	144	57	02	12	65	03	00	K300	07	02	26	2X	2X	9	5		
167	50	01	145	00	02	12	65	06	00	K300	08	25	33	2X	2X	9	5		
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170	50	05	145	15	02	12	65	15	00	K300	11	02	00	2X	2X	8	3		
171	50	00	144	57	02	12	65	18	00	K300	11	85	05	21	2X	9	7		
172	49	58	144	48	02	12	65	21	00	K300	09	01	07	20	22	8	3		
173	50	02	144	40	03	12	65	00	00	K300	07	15	00	20	23	9	1		
174	50	03	144	38	03	12	65	03	00	K300	03	01	03	2X	2X	8	2		
175	50	02	144	34	03	12	65	06	00	K300	00	02	04	2X	2X	8	3		
176	50	04	144	38	03	12	65	09	00	K300	-97	02	06	2X	2X	8	3		
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178	50	09	144	36	03	12	65	15	00	K300	-90	03	21	2X	2X	6	8		
179	49	55	144	15	05	12	65	18	00	K300	-81	15	20	24	26	9	6		
180	49	46	144	25	05	12	65	21	00	K300	-81	16	15	21	24	9	7		
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182	49	52	145	00	06	12	65	03	00	K300	-88	80	31	2X	2X	9	7		
183	49	54	144	45	06	12	65	06	00	K300	-91	02	35	2X	2X	8	5		
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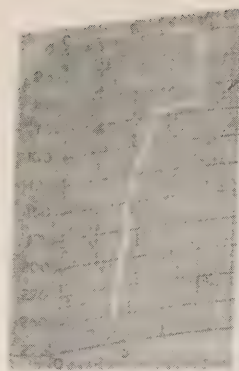
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	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
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187	50	05	145	25	07	12	65	21	00	K300	01	15	14	23		26		8	7
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189	50	02	144	48	08	12	65	03	00	K300	03	03	20	2X		2X		9	5
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196	50	03	145	05	09	12	65	03	00	K300	07	61	22	2X		2X		7	8
197	50	03	144	58	09	12	65	06	00	K300	06	02	21	2X		2X		7	8
198	50	02	144	55	09	12	65	09	00	K300	07	02	19	2X		2X		6	8
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201	50	03	144	42	09	12	65	18	00	K300	09	02	16	23		2X		8	6
202	49	56	144	45	09	12	65	21	00	K300	09	01	12	23		2X		8	7
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206	49	51	144	37	10	12	65	09	00	K300	11	01	27	2X		2X		8	2
207	49	56	144	50	10	12	65	12	00	K300	13	02	25	2X		2X		8	5
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213	50	12	144	47	11	12	65	06	00	K300	19	02	25	2X		2X		6	8
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TABLE I

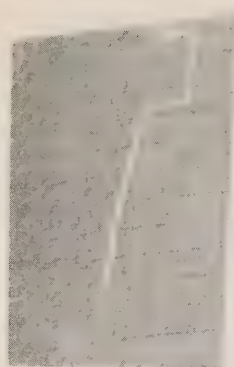
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	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	
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216	50	10	145	05	11	12	65	15	00	K300	18	61	27	2X	2X	6	8	
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220	50	11	145	15	12	12	65	03	00	K300	12	10	27	2X	2X	7	8	
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222	50	00	146	00	12	12	65	18	00	K300	25	02	18	22	25	3	8	
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226	50	05	144	20	13	12	65	06	00	K300	21	61	22	2X	2X	7	8	
227	50	04	143	42	13	12	65	09	00	K300	19	61	28	2X	2X	4	8	
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229	49	50	140	40	13	12	65	22	00	K120								
230	49	41	139	40	14	12	65	01	10	K100								
231	49	27	134	40	14	12	65	17	05	J940								
232	49	23	133	40	14	12	65	19	30	J750								
233	49	10	131	40	15	12	65	01	00	J570								
234	49	09	130	40	15	12	65	04	15	J600								
235	49	05	129	40	15	12	65	08	00	J420								
236	49	03	128	40	15	12	65	11	00	J380								
237	48	53	127	40	15	12	65	14	00	J360								
238	48	40	126	40	15	12	65	18	10	0710	22	02	20	24	27	7	7	
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240	48	37	125	33	15	12	65	20	20	0070								



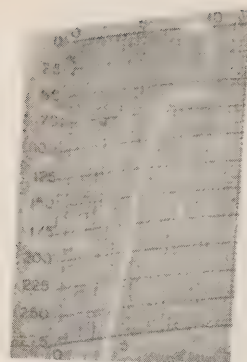
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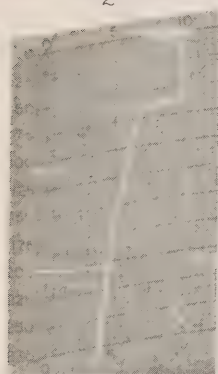
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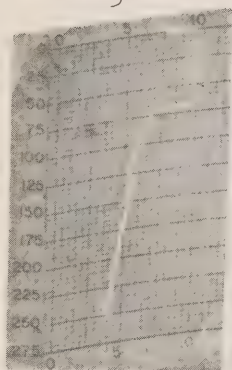
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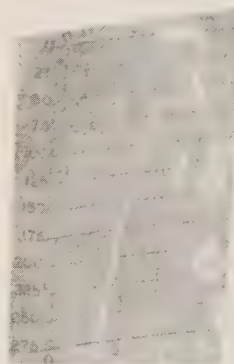
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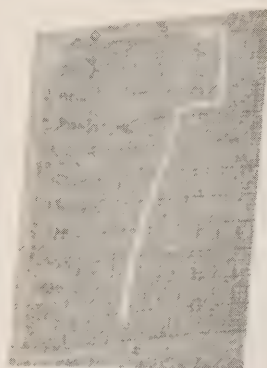
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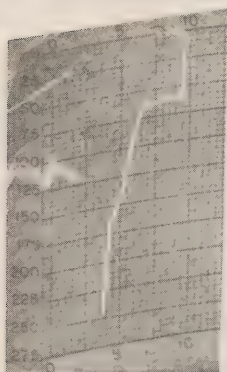
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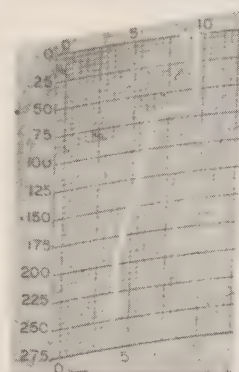
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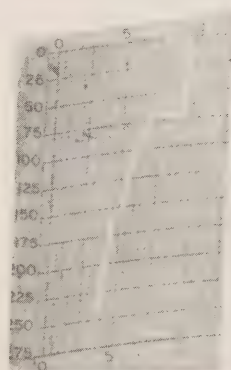
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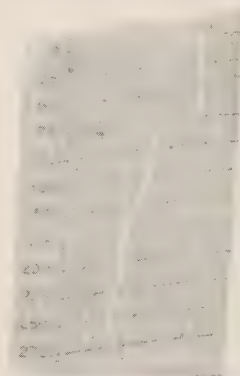
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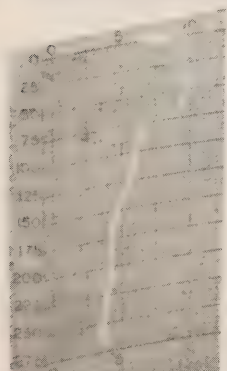
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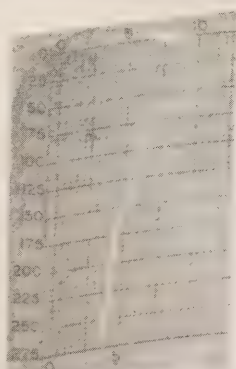
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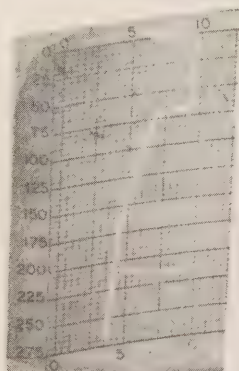
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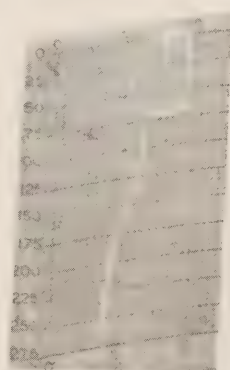
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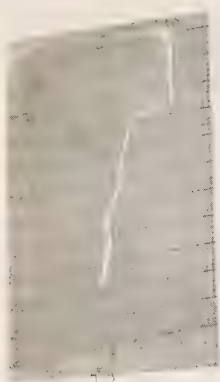
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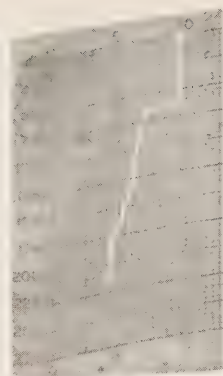
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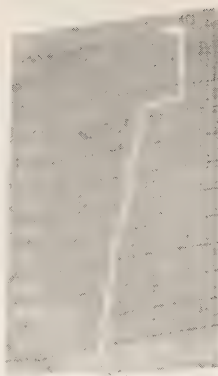
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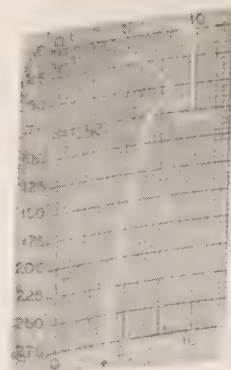
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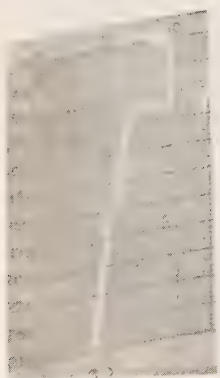
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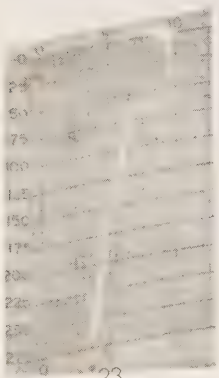
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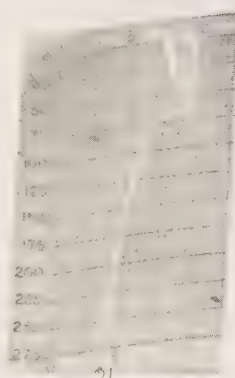
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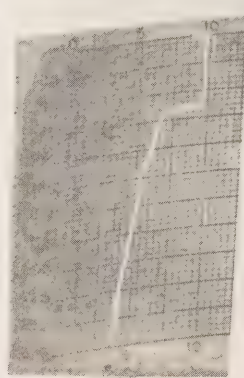
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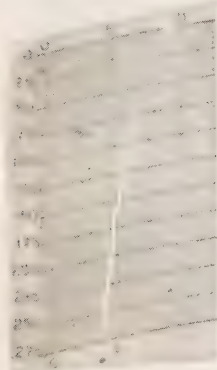
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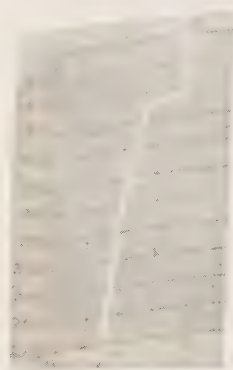
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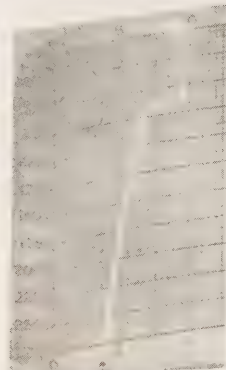
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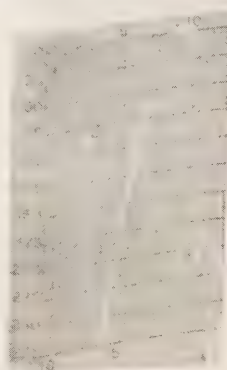
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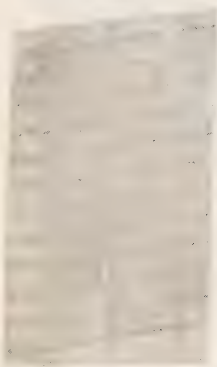
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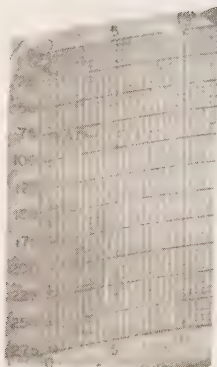
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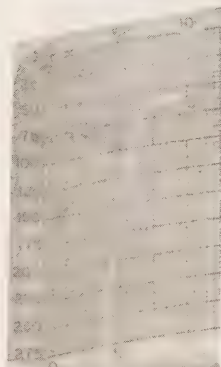
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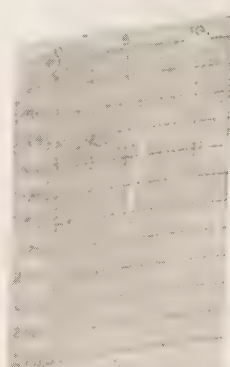
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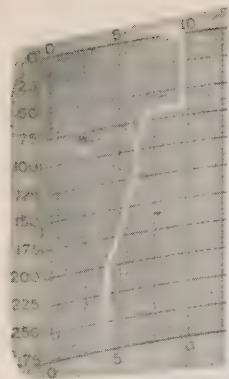
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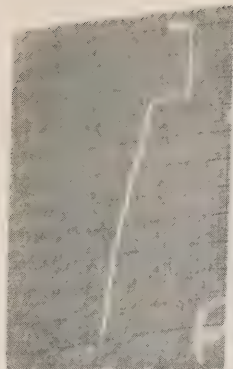
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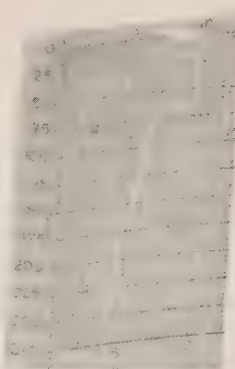
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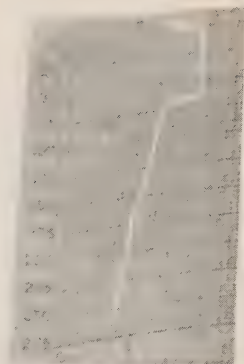
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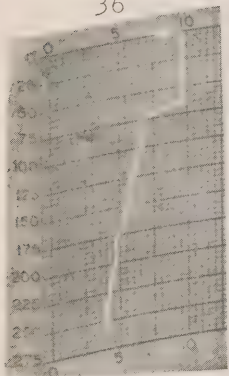
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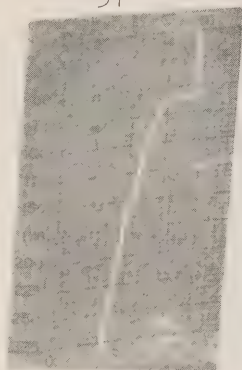
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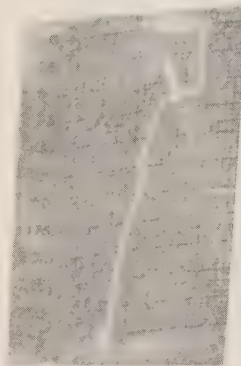
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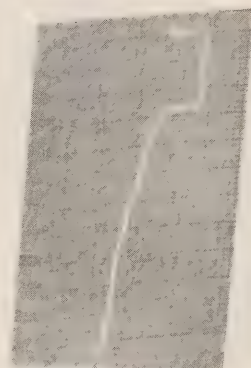
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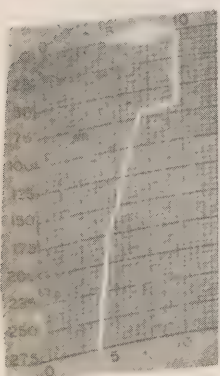
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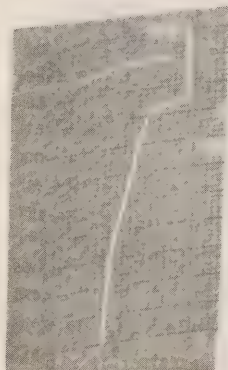
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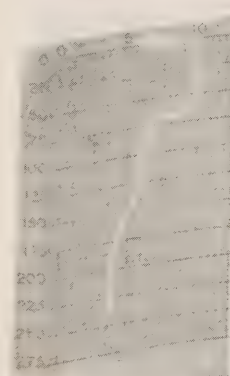
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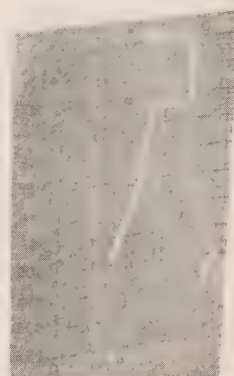
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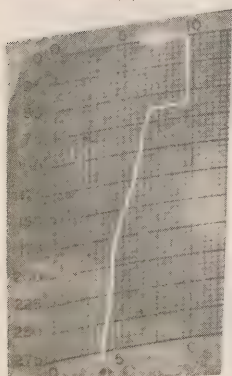
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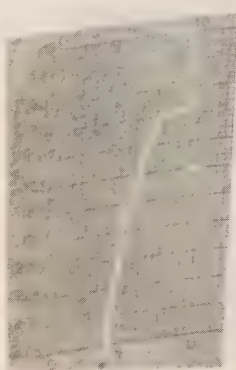
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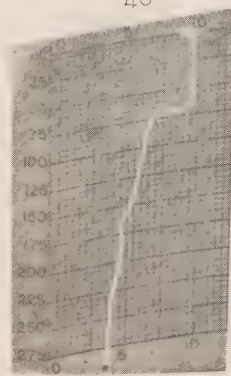
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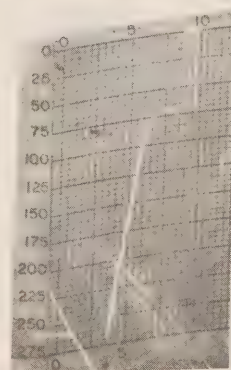
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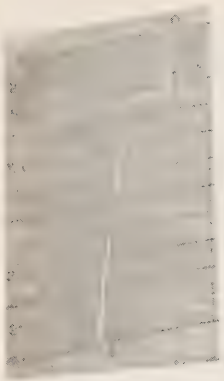
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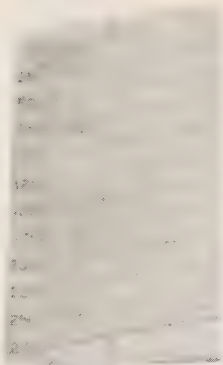
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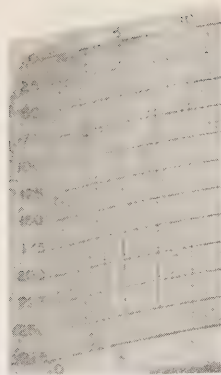
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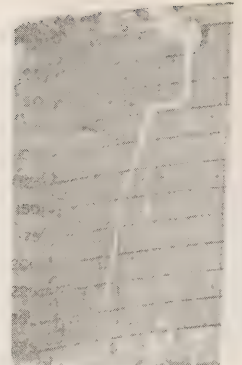
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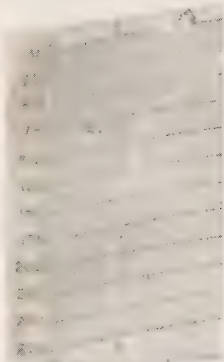
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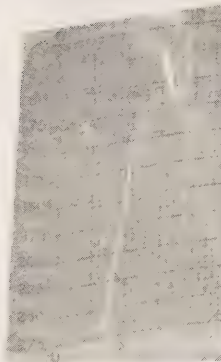
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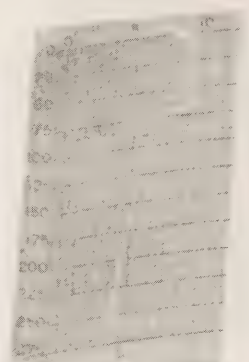
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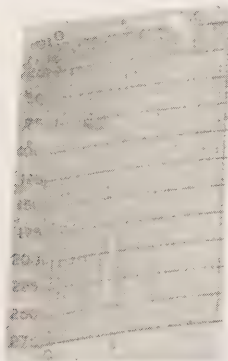
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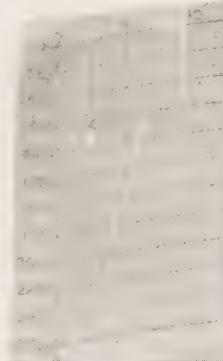
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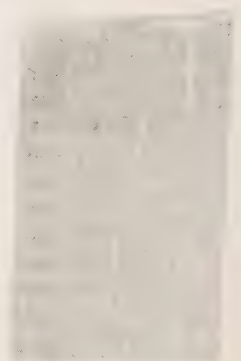
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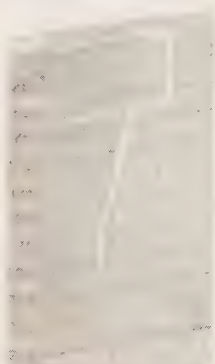
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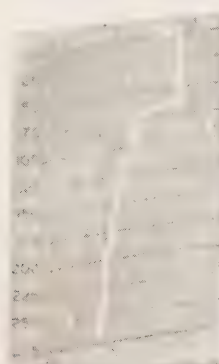
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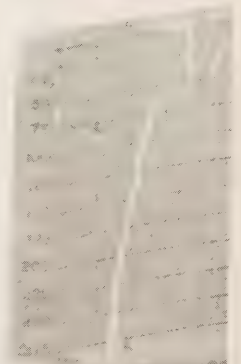
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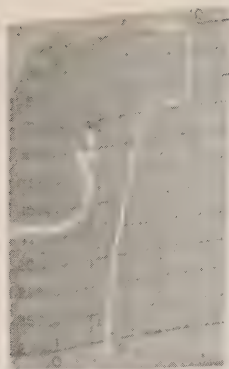
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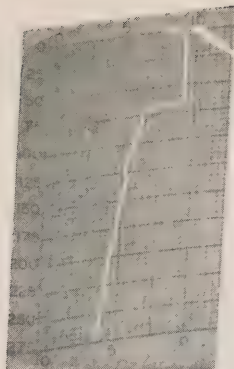
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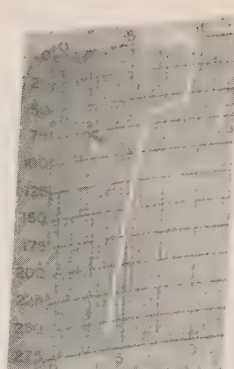
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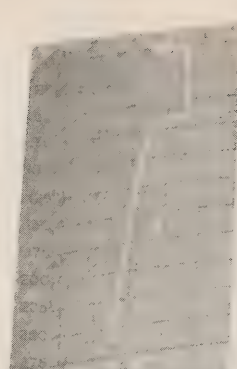
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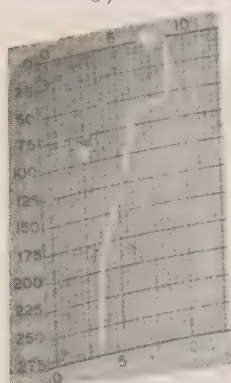
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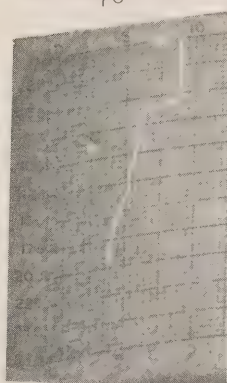
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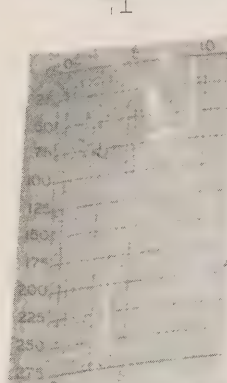
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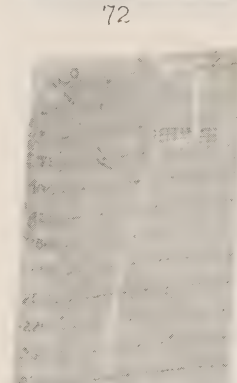
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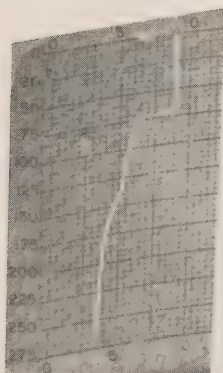
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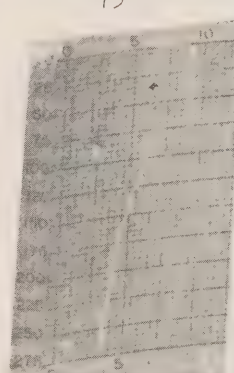
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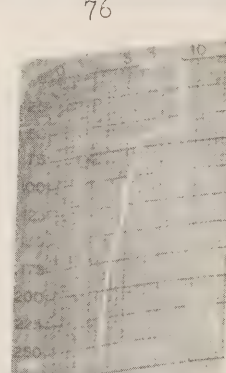
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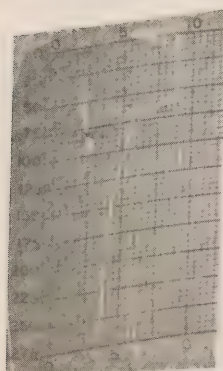
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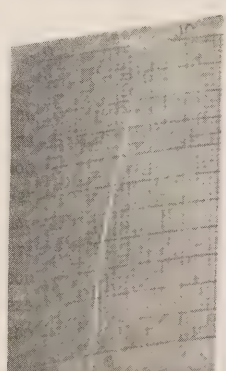
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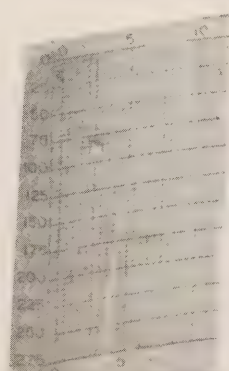
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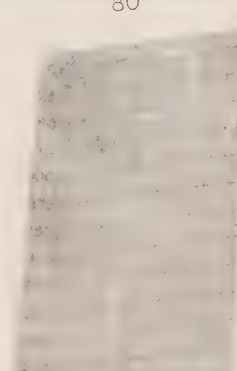
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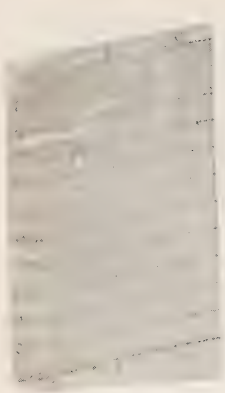
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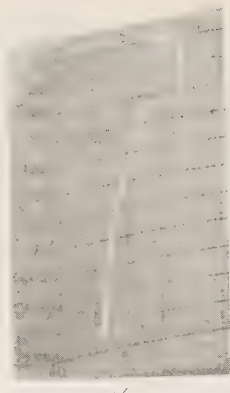
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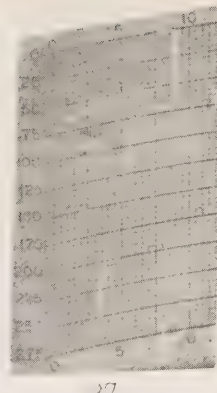
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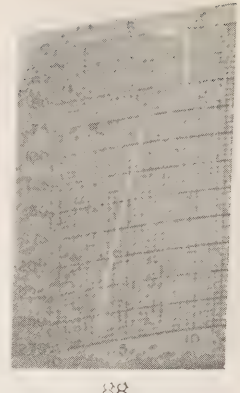
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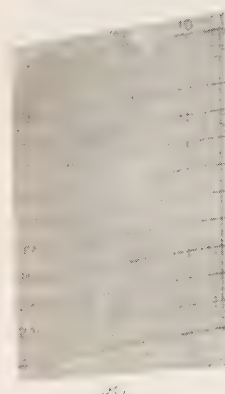
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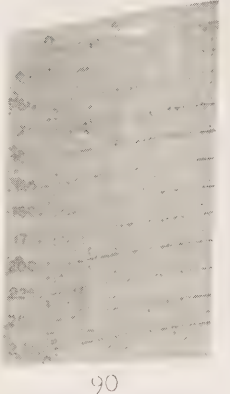
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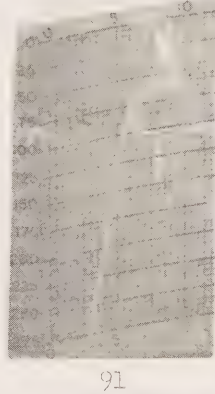
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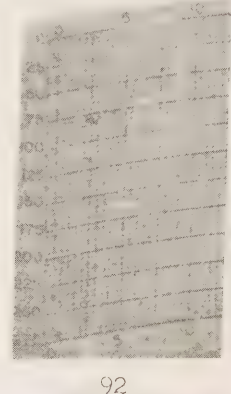
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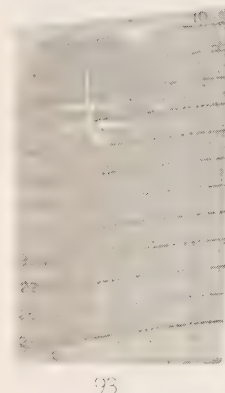
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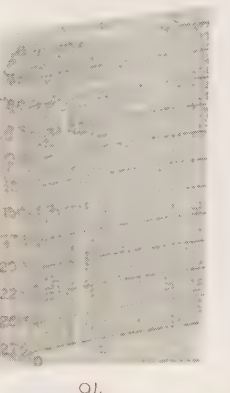
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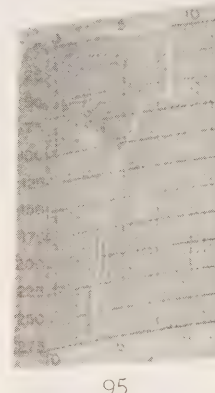
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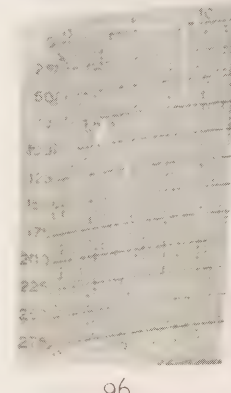
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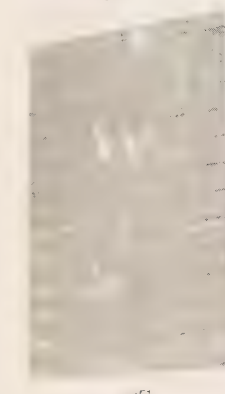
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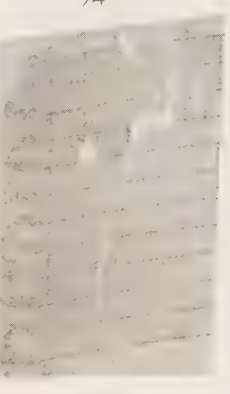
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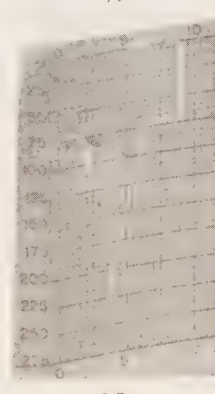
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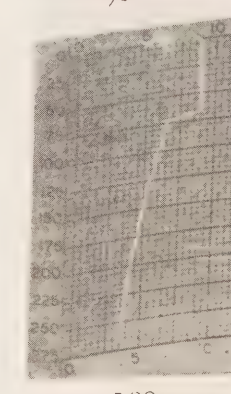
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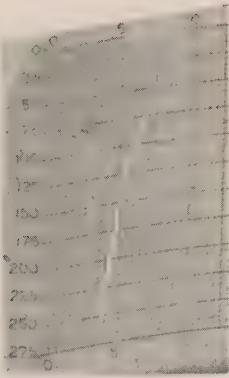
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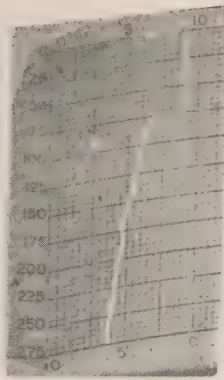
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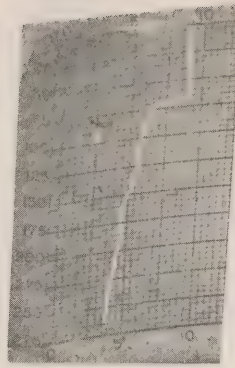
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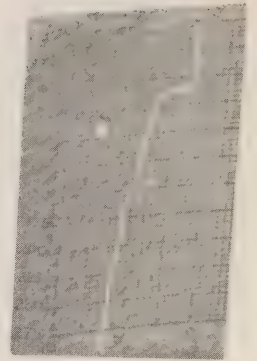
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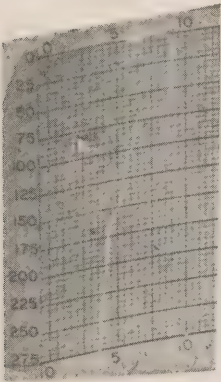
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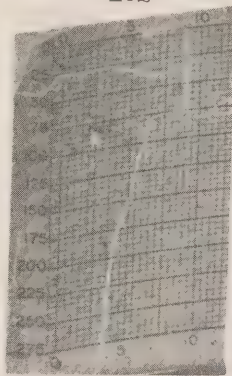
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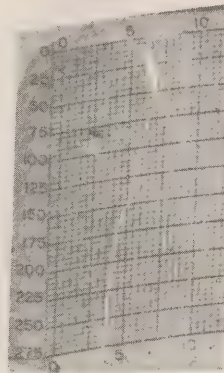
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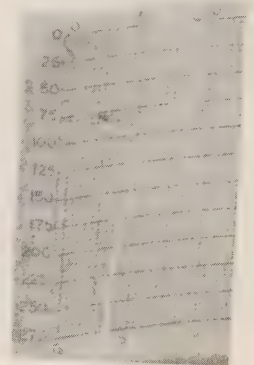
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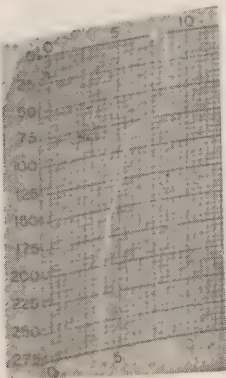
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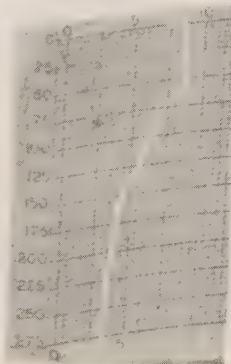
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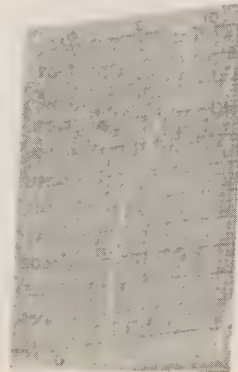
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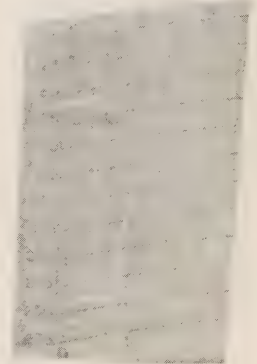
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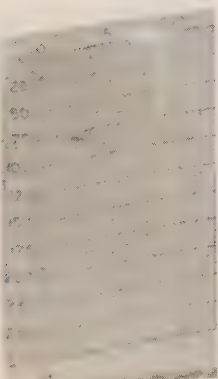
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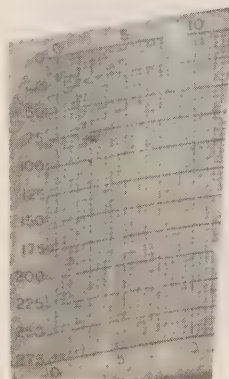
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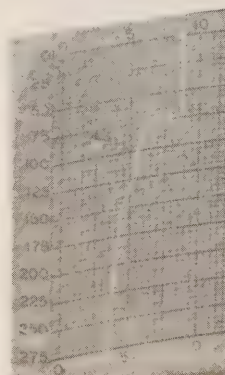
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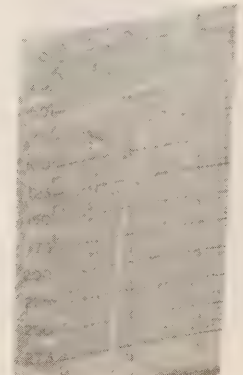
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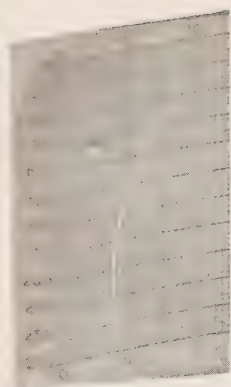
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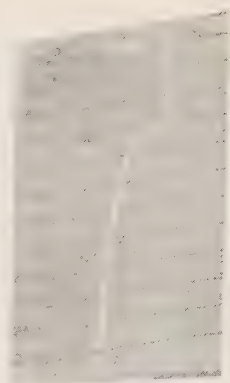
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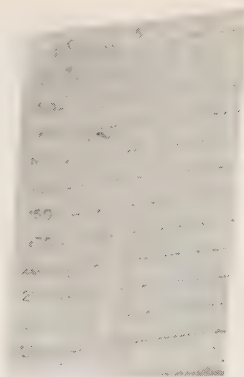
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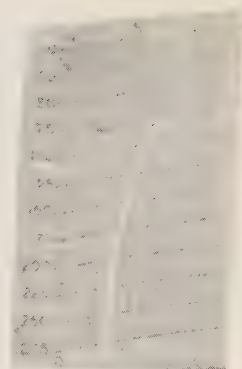
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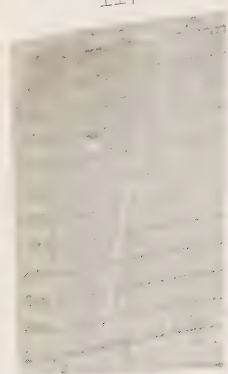
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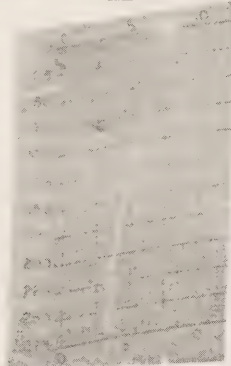
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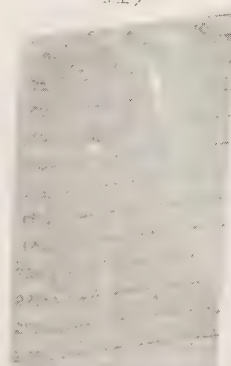
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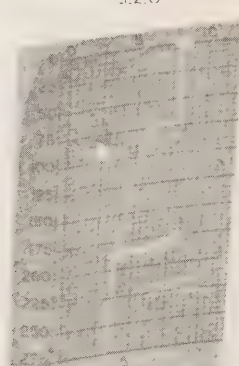
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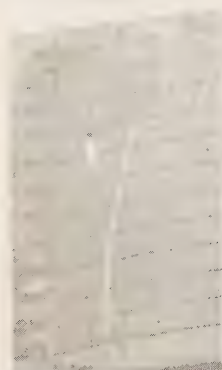
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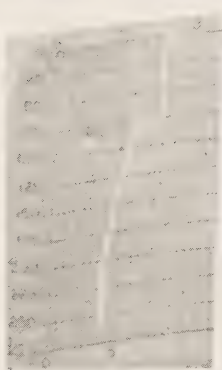
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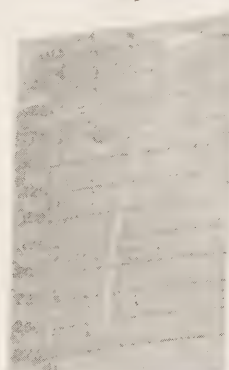
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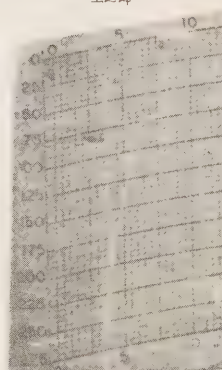
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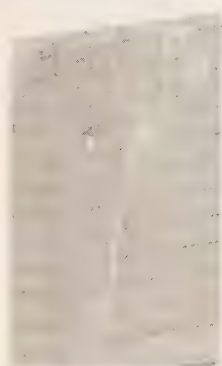
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127



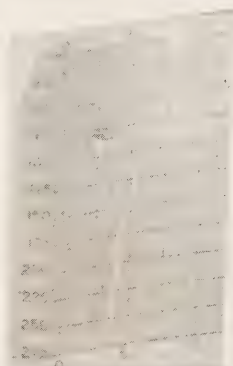
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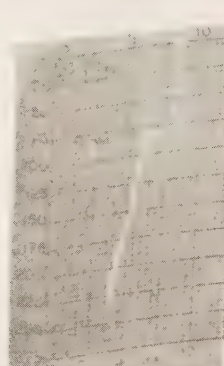
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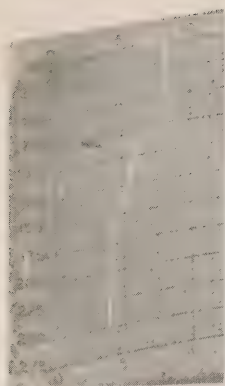
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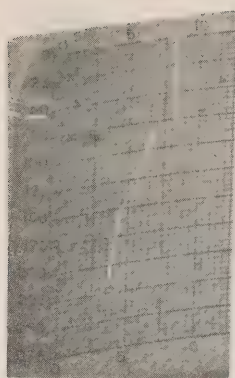
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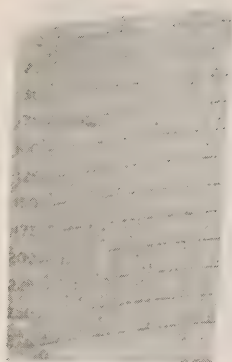
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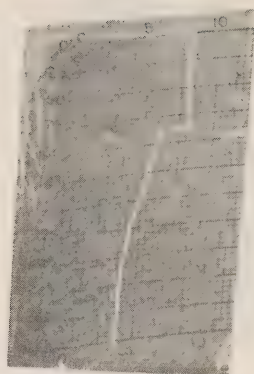
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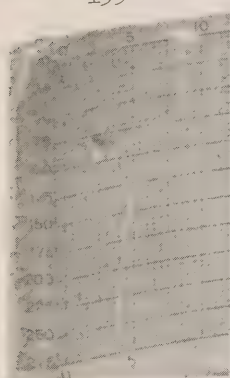
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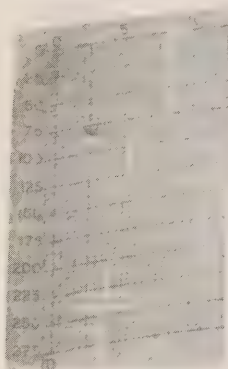
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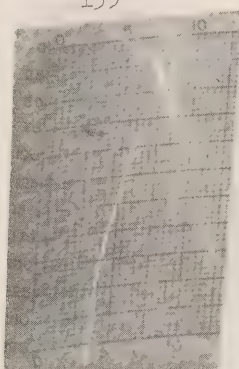
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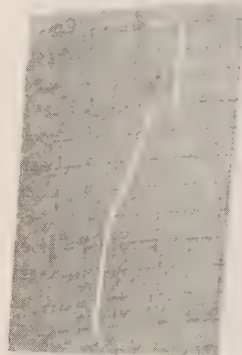
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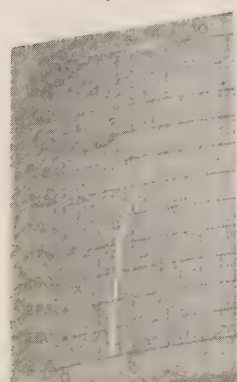
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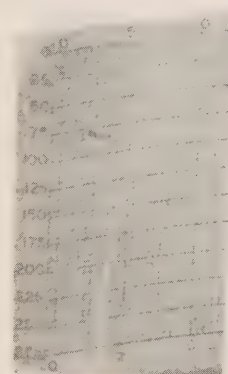
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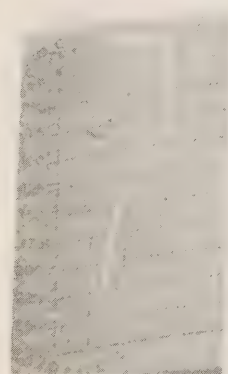
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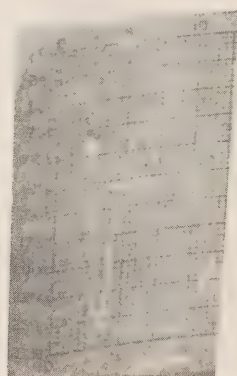
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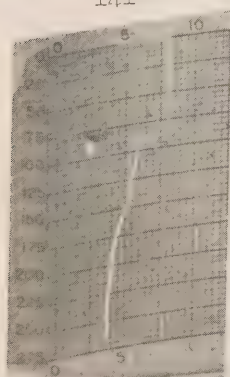
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143



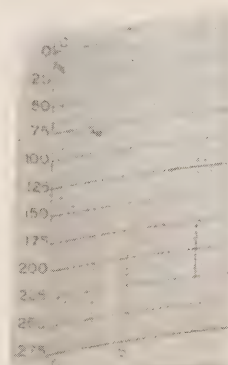
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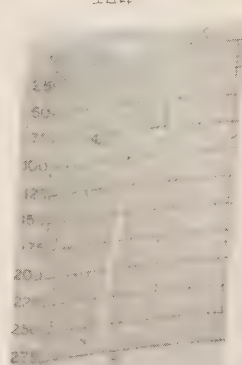
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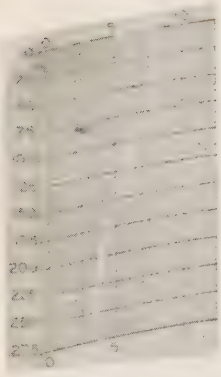
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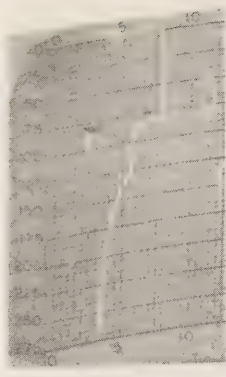
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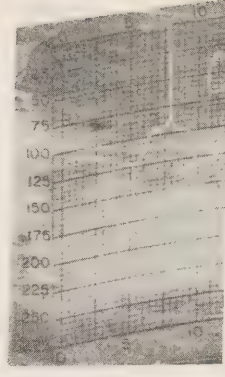
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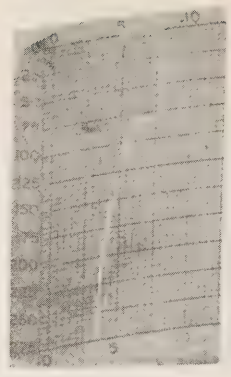
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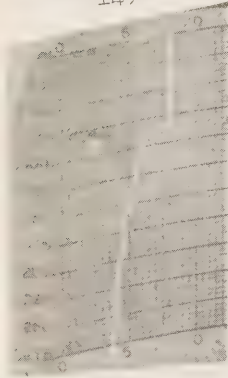
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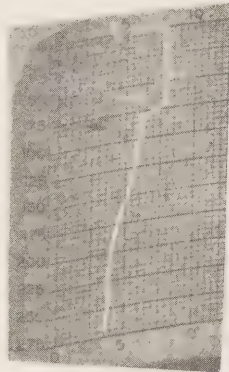
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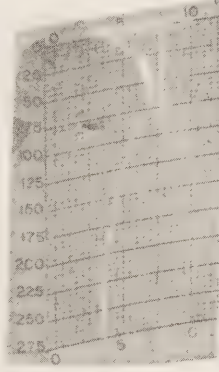
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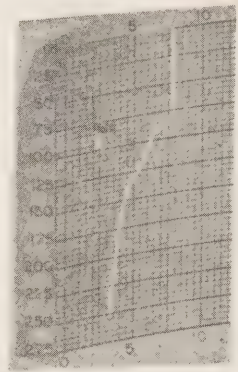
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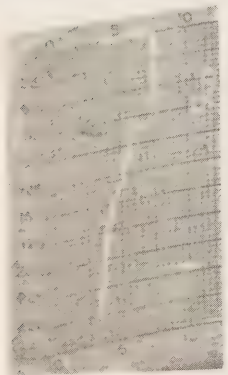
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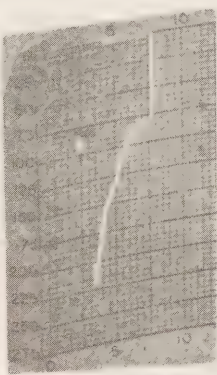
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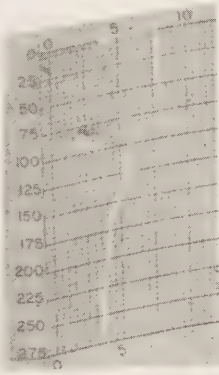
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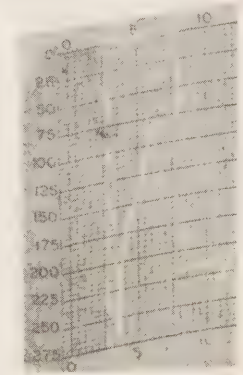
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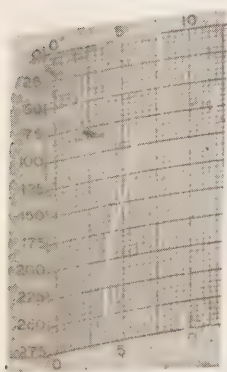
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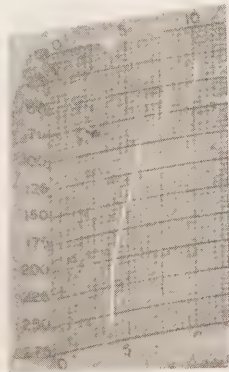
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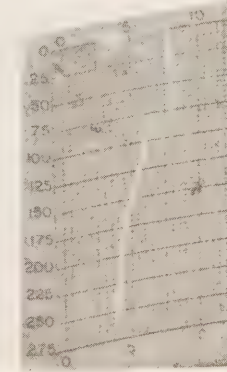
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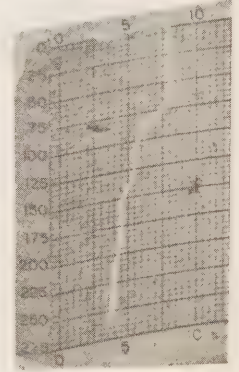
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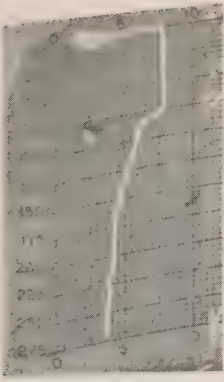
162



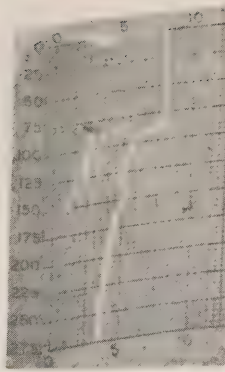
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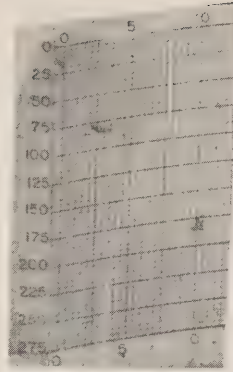
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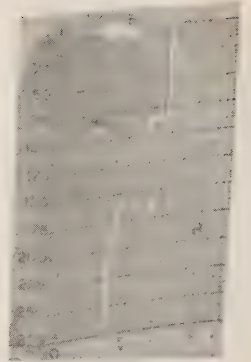
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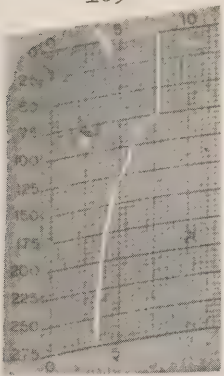
166



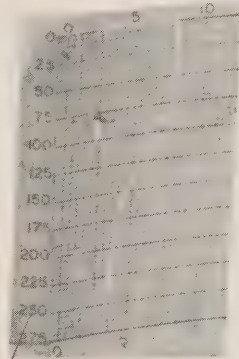
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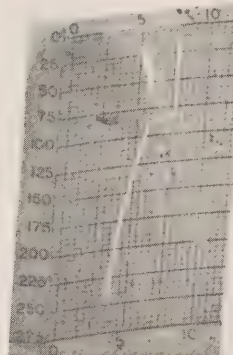
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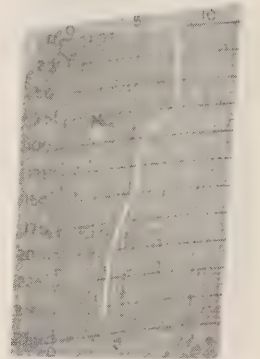
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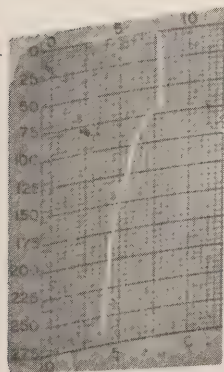
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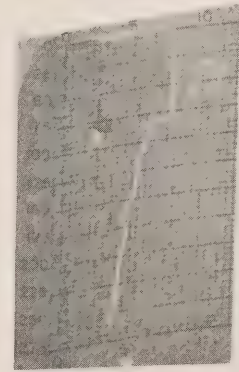
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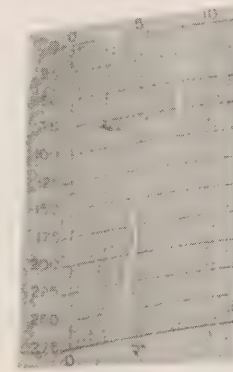
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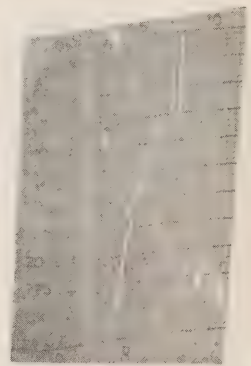
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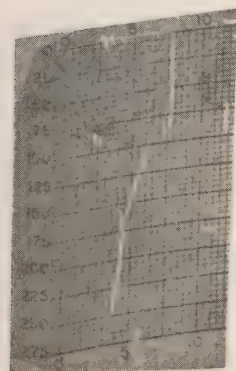
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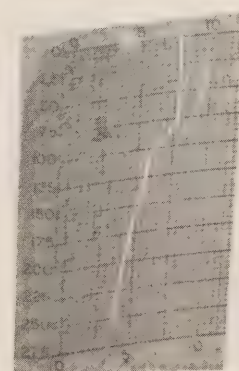
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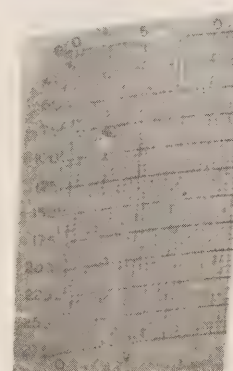
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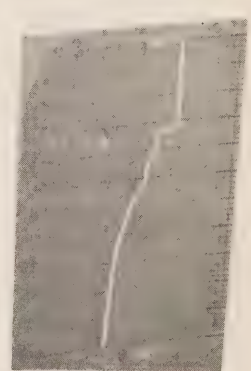
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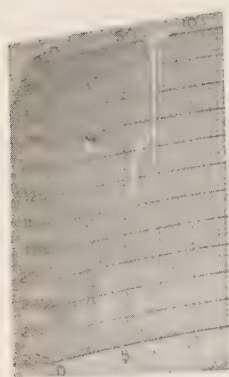
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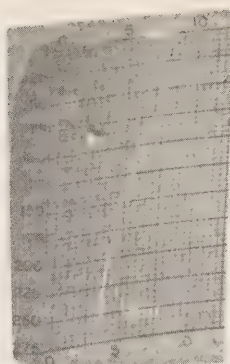
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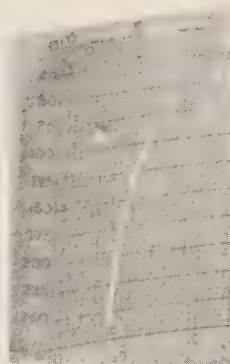
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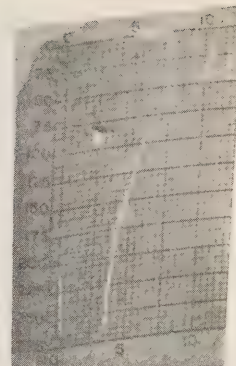
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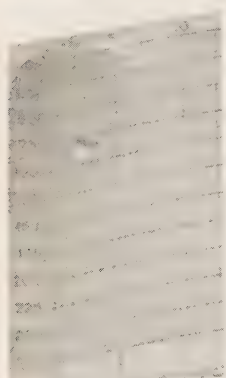
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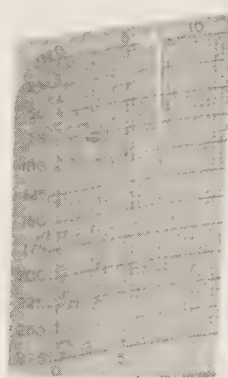
183



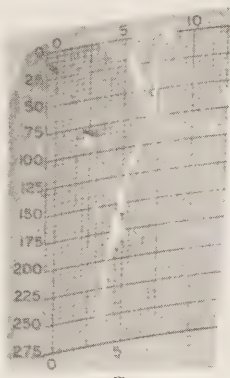
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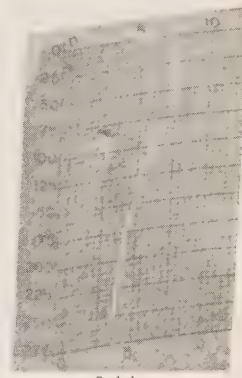
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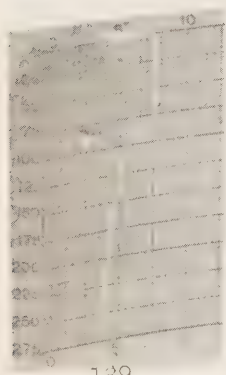
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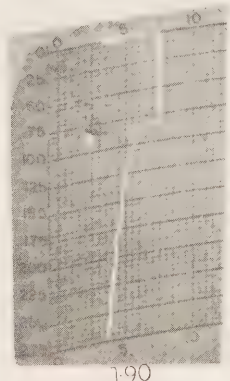
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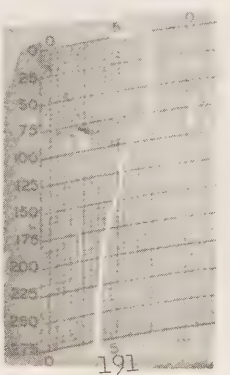
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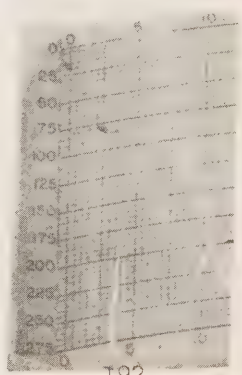
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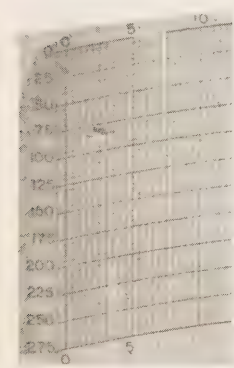
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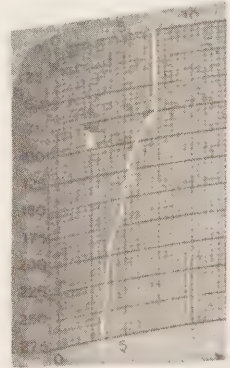
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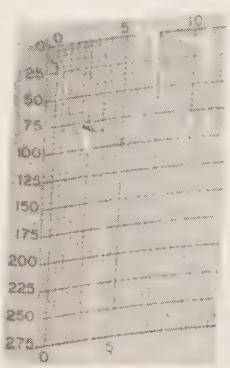
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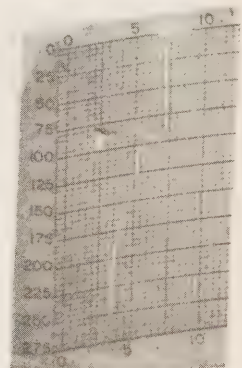
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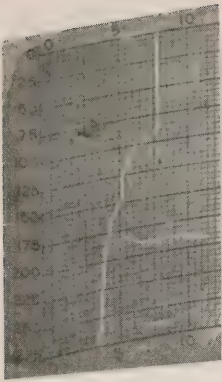
194



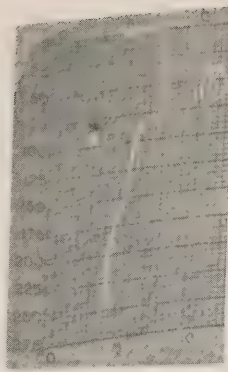
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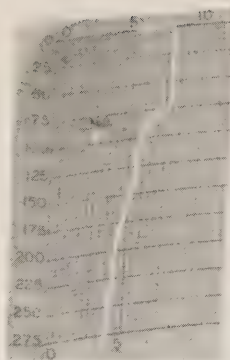
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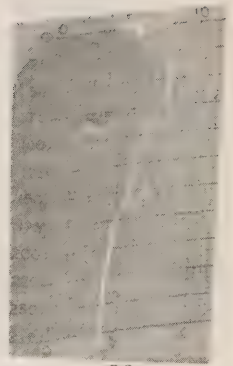
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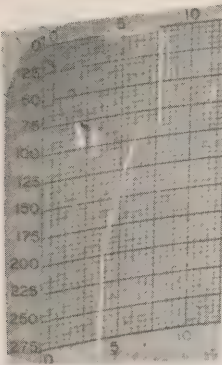
198



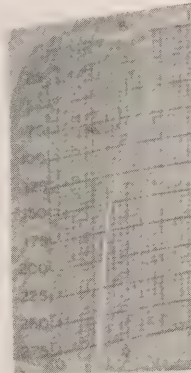
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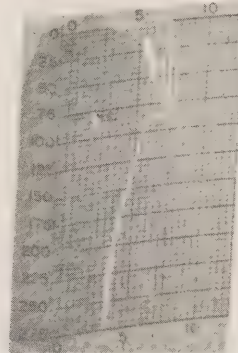
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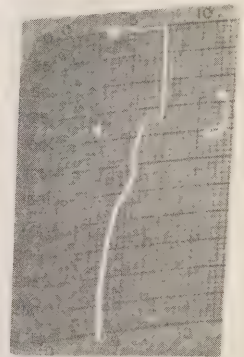
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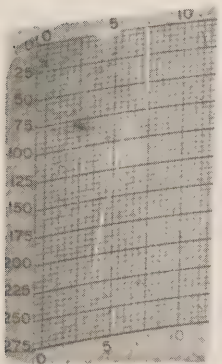
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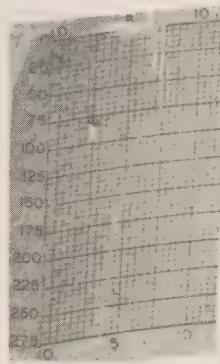
203



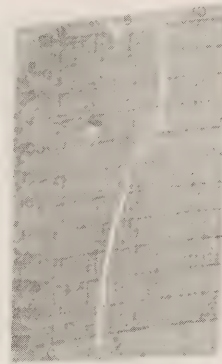
204



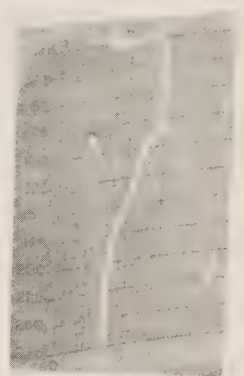
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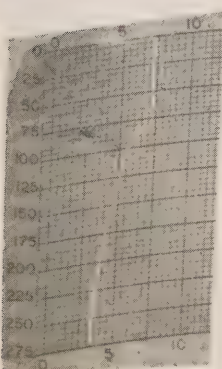
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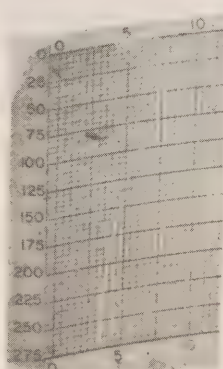
207



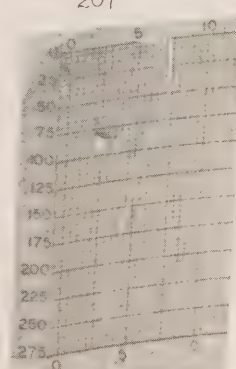
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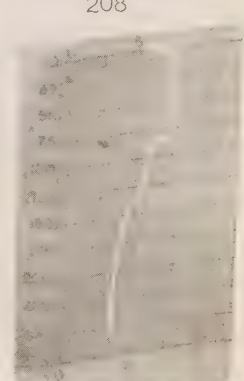
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210



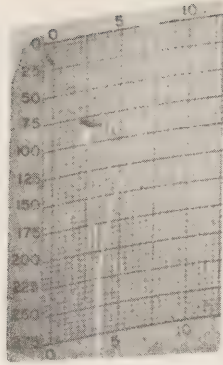
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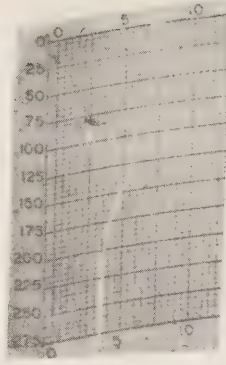
212



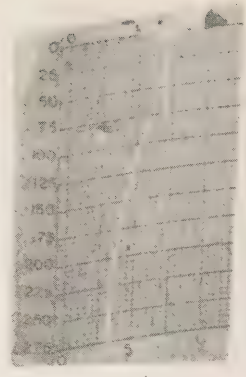
213



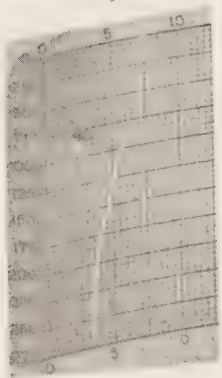
214



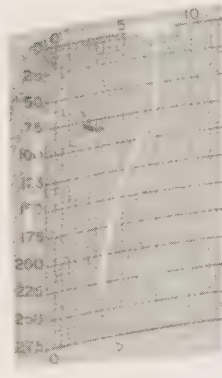
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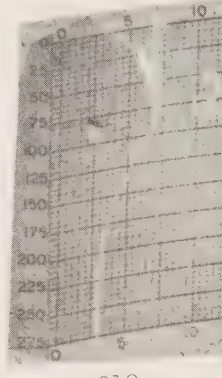
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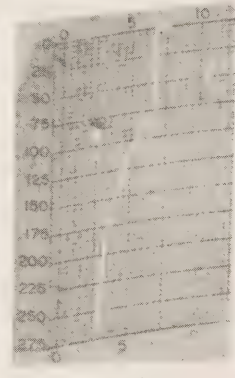
217



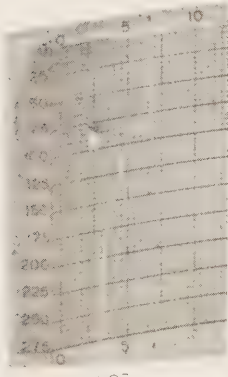
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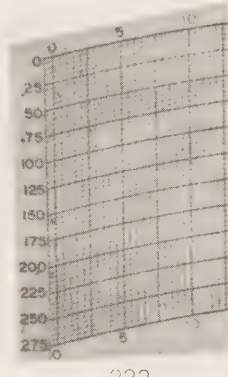
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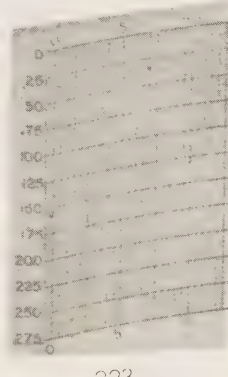
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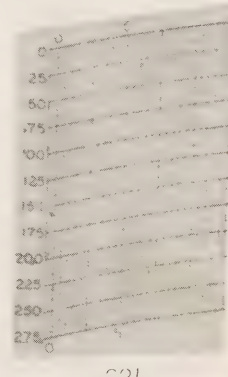
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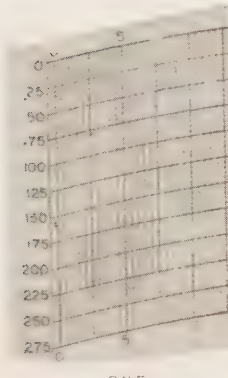
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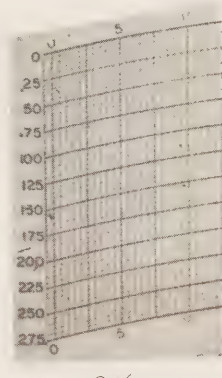
223



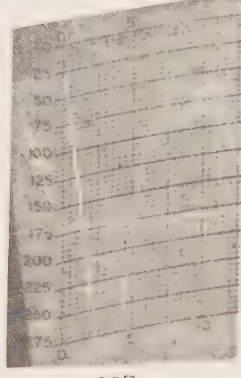
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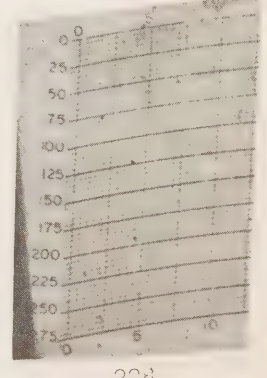
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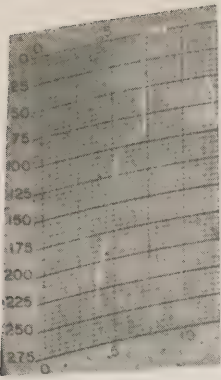
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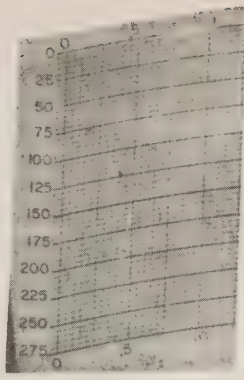
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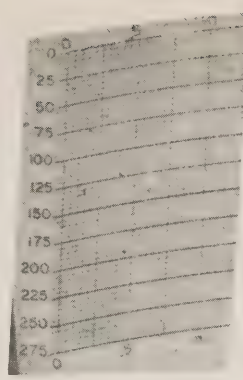
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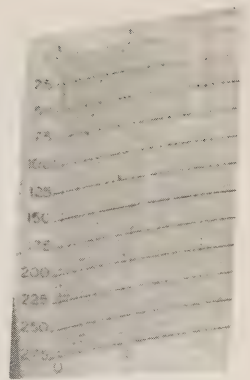
229



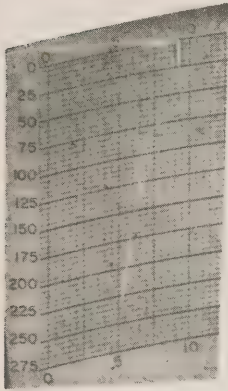
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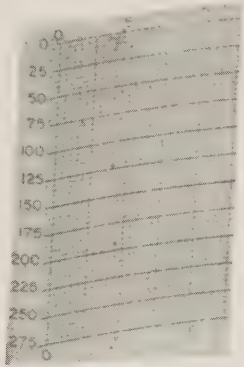
231



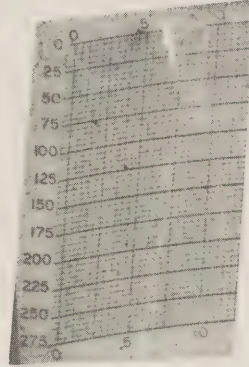
232



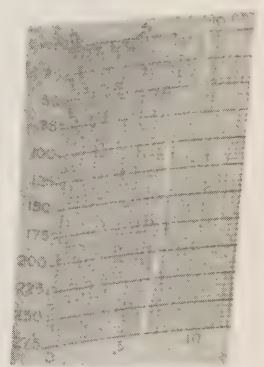
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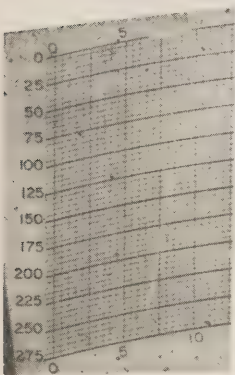
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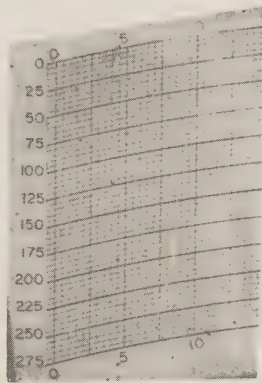
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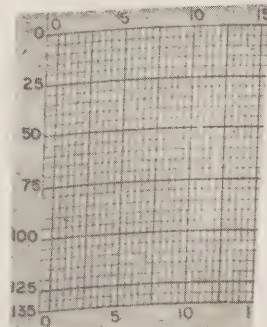
236



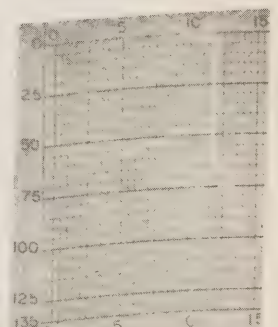
237



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SECTION V

Surface Salinity Data

Surface Salinity Observations

Date-Time	Position		Salinity
GMT	Latitude	Longitude	‰
CCGS "St. Catharines", Survey P-65-4			
65-09-18-17.3	48°56'n	129°40'w	32.480
19-01.7	49°05'	131°40'	32.676
19-06.0	49°10'	132°40'	32.669
19-09.6	49°15'	133°40'	32.534
19-16.2	49°23'	135°40'	32.517
20-00.3	49°30'	137°40'	32.513
20-07.4	49°37'	139°40'	32.467
20-12.8	49°45'	141°40'	32.450
24-00.0	49°42'	144°41'	32.486
25-00.0	49°55'	145°12'	32.530
25-12.0	50°06'	145°05'	32.515
26-00.0	50°03'	145°04'	32.511
27-00.0	50°07'	144°55'	32.508
28-00.0	50°01'	144°55'	32.518
29-00.0	49°56'	145°08'	32.464
30-00.0	50°00'	144°59'	32.508
65-10-01-00.0	50°00'	144°53'	32.477
02-00.0	50°03'	144°54'	32.503
03-00.0	50°02'	144°58'	32.461
04-00.0	50°04'	144°57'	32.421
07-00.0	50°01'	144°49'	32.468
08-00.0	50°07'	144°55'	32.449
09-00.0	50°00'	144°55'	32.482
10-00.0	49°49'	145°01'	32.486
11-00.0	50°06'	144°59'	32.465
12-00.0	50°02'	144°51'	32.496
13-00.0	49°47'	145°10'	32.500
14-00.0	49°56'	144°47'	32.521
15-00.0	50°02'	144°54'	32.501
16-00.0	49°54'	145°12'	32.526
17-18.0	49°50'	145°00'	32.551
18-00.0	49°50'	144°45'	32.521
19-00.0	49°59'	144°59'	32.552
20-00.0	50°01'	144°49'	32.553
21-00.0	49°59'	144°57'	32.551
22-00.0	49°58'	145°02'	32.574
23-00.0	50°07'	145°00'	32.382
24-00.0	49°53'	145°02'	32.543
25-22.2	49°18'	146°05'	32.532
26-12.5	50°00'	146°05'	32.501
28-06.0	50°02'	143°54'	32.585
29-00.0	49°46'	144°48'	32.555
30-00.0	50°00'	144°02'	32.518
31-00.0	49°58'	145°07'	32.495

Surface Salinity Observations

Date-Time GMT	Position		Salinity ‰
	Latitude	Longitude	
65-11-01-00.0	49°56'n	144°52'w	32.532
02-00.0	49°48'	143°44'	32.533
02-10.8	49°46'	141°40'	32.730
02-13.8	49°41'	140°40'	32.517
02-17.0	49°38'	139°40'	32.570
02-19.5	49°34'	138°40'	32.659
03-00.0	49°30'	137°40'	32.584
03-02.5	49°26'	136°40'	32.476
03-05.0	49°22'	135°40'	32.441
03-08.5	49°17'	134°40'	32.464
03-11.4	49°13'	133°40'	32.609
03-14.7	49°10'	132°40'	32.542
03-21.0	49°02'	130°40'	32.510
03-23.8	48°56'	129°40'	32.297
04-02.4	48°51'	128°40'	32.287
04-05.0	48°48'	127°47'	32.303
04-08.2	48°42'	126°40'	32.248
04-10.2	48°38'	126°00'	32.213
04-11.3	48°33'	125°33'	32.160

Surface Salinity Observations

Date-Time	Position		Salinity
GMT	Latitude	Longitude	‰
CCGS " Stonetown", Patrol No. 67			
65-11-04-00.0	49°58'n	144°57'w	32.500
05-00.0	50°23'	145°42'	32.571
06-00.0	49°50'	145°07'	32.484
07-00.0	50°05'	145°12'	32.564
08-00.0	50°14'	144°54'	32.630
09-00.0	50°02'	144°51'	32.612
10-00.0	50°08'	144°47'	32.612
11-00.0	50°00'	144°53'	32.615
12-00.0	49°35'	144°50'	32.470
13-00.0	50°08'	145°10'	32.546
15-00.0	50°12'	145°07'	32.607
16-00.0	49°59'	144°43'	32.607
18-00.0	50°03'	145°18'	32.577
19-00.0	49°50'	144°57'	32.698
20-00.0	50°01'	144°52'	32.516
21-00.0	50°05'	144°50'	32.638
22-00.0	49°58'	144°50'	32.662
23-00.0	49°45'	144°48'	32.667
24-00.0	50°10'	145°00'	32.595
25-00.0	50°10'	144°51'	32.512
26-00.0	49°56'	145°18'	32.642
27-00.0	50°00'	145°25'	32.532
28-00.0	49°59'	145°00'	32.584
29-00.0	50°11'	145°29'	32.620
30-00.0	50°05'	145°32'	32.617
65-12-01-00.0	50°08'	145°30'	32.678
02-00.0	49°55'	144°45'	32.646
03-00.0	50°02'	144°40'	32.648
06-00.0	49°42'	145°30'	32.586
08-00.0	50°03'	145°10'	32.598
09-00.0	50°00'	145°10'	32.633
10-00.00	49°59'	144°51'	32.604
11-00.0	50°03'	145°30'	32.646
12-00.0	50°17'	145°00'	32.618
13-00.0	50°07'	145°00'	32.632

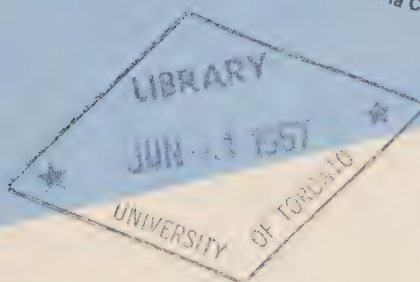
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CANADA

2



GULF STREAM between CAPE COD and BERMUDA

November 16 to December 15, 1964

No. 7

1966 Data Record Series

Canadian Oceanographic Data Centre

**Programmed by the
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GULF STREAM between CAPE COD and BERMUDA

November 16 to December 15, 1964

CODC Reference: 10-64-028

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DEPARTMENT OF MINES AND TECHNICAL SURVEYS
MARINE SCIENCES BRANCH

GULF STREAM between CAPE COD and BERMUDA

Ship: CSS "BAFFIN"

Local cruise designation: BIO-28-64

Cruise period: November 16 - December 15, 1964

Observers: W. B. Bailey - Scientist-in-Charge
J. Butters
C. D. Maunsell
R. R. Weiler

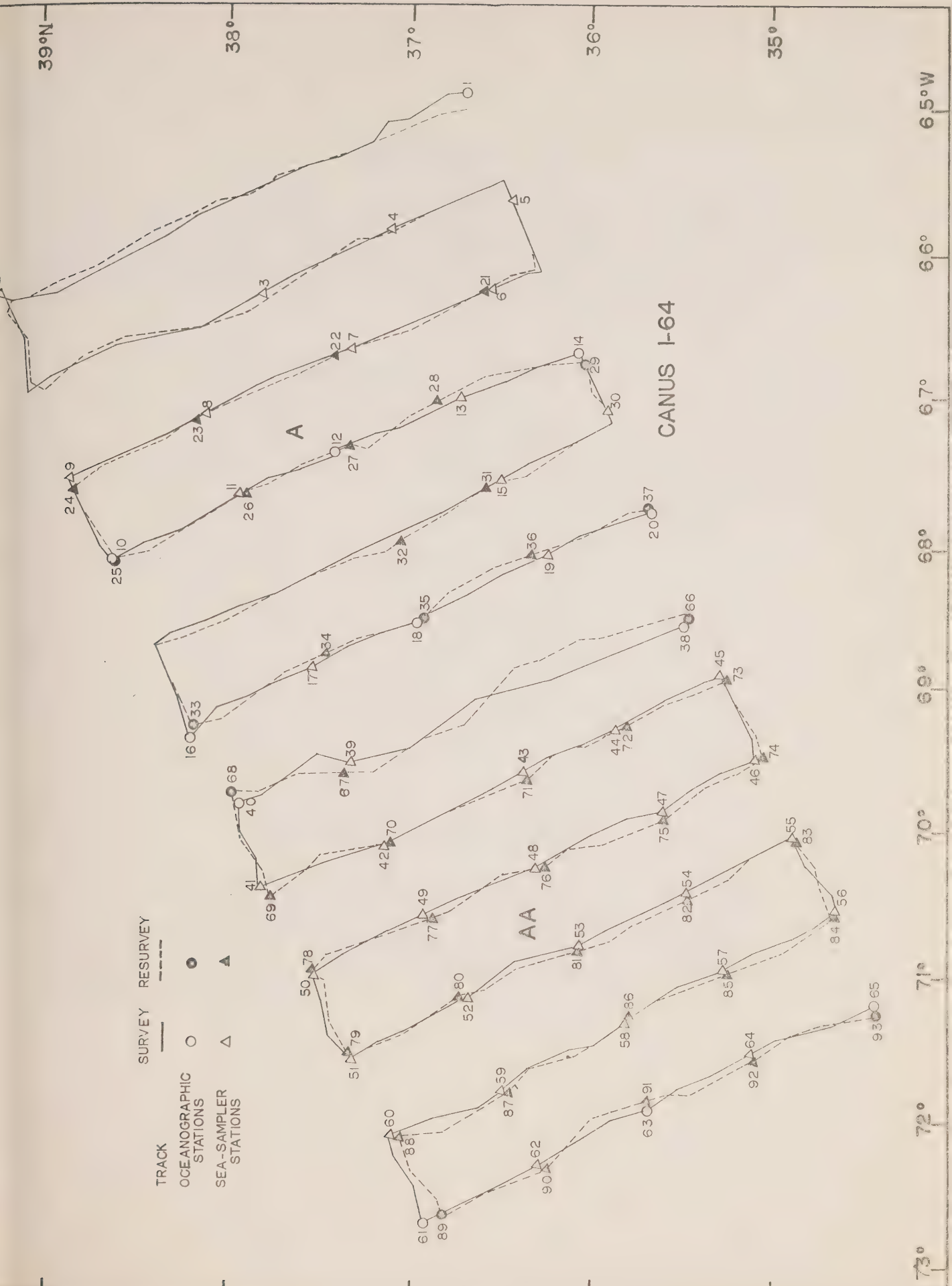
Bedford Institute of Oceanography, Dartmouth, N. S.

SECTION I

Description of data collection procedures

"BAFFIN"

Canadian Hydrographic Service



INTRODUCTION

This was a Canadian - United States co-operative oceanographic survey. The primary purpose of this cruise was to evaluate the compatibility of three sources of data available to Oceanographic Services for Defence, and to study the change of the structure above the layer depth produced by time by re-sampling the original positions after an interval of 5 days.

EXTRACT OF CRUISE LOG

16 November 1964	Departed Halifax
19 November	Arrived Bermuda
21-25 November	Survey of area A
26-30 November	Re-Survey of area A
1- 6 December	Survey of area AA
7-11 December	Re-Survey of area AA
12 December	Arrived Bermuda
15 December	Arrived Halifax

OBSERVATIONAL PROCEDURES

The Canadian section of the survey net was divided into two areas, A and AA. These areas were re-surveyed after an interval of 5 days. Bathy-thermographs and surface salinity samples were taken hourly in addition to a continuous track profile of sea surface temperature obtained by a thermistor in the engine injection intake. Temperature and salinity data were collected from 22 stations to a depth of 700 m.

LABORATORY PROCEDURES

That salinity determinations were made on the NIO conductivity bridge No. 14 at the Bedford Institute of Oceanography.

BATHYTHERMOGRAPH DATA

A total of 532 bathythermographs were taken and processed at the Bedford Institute of Oceanography.

PERSONNEL

At Sea:

W. B. Bailey	Scientist-in-Charge
J. Butters	
C. D. Maunsell	
R. R. Weiler	

Data Analyses:

Oceanographic Data:	R. R. Weiler
Salinity determination:	W. Young
BT processing:	T. A. Grant

SECTION 11

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "estimate of precision" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a standard deviation (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The measurement error estimate of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "interpolation error estimate" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; first, to give an indication of the quality of the interpolated data; second, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "measurement error estimate" comprises the "combined measurement and interpolation error estimate". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

[illegible][illegible]

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (\bar{V}_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the combined measurement and interpolation error estimate. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the interpolation error estimate is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

- (1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.
- (2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.
- (3) LATITUDE: Indicate the position of the platform at the time of observation.
- (4) LONGITUDE:
- (5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).
- (6) YEAR:
- (7) MONTH:
- (8) DAY:
- (9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.
- (10) COUNTRY/INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.
- (11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".
- (12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: The Forel-Ule Code (see table 2 and NOTE under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the predominant non-wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_2
					(13) pH.

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 C1\%$, reported in:

- a. 1/100 parts per 1000, or
- b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

- (8) PO_4 Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
- (9) -P- Total Phosphorus reported to hundredths of microgram-atoms per litre.
- (10) NO_2 Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre -- No dissolved nitrogen included --
- (11) NO_3 Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
- (12) SiO_2 Silicate-Silicon reported in whole microgram-atoms per litre.
- (13) pH The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

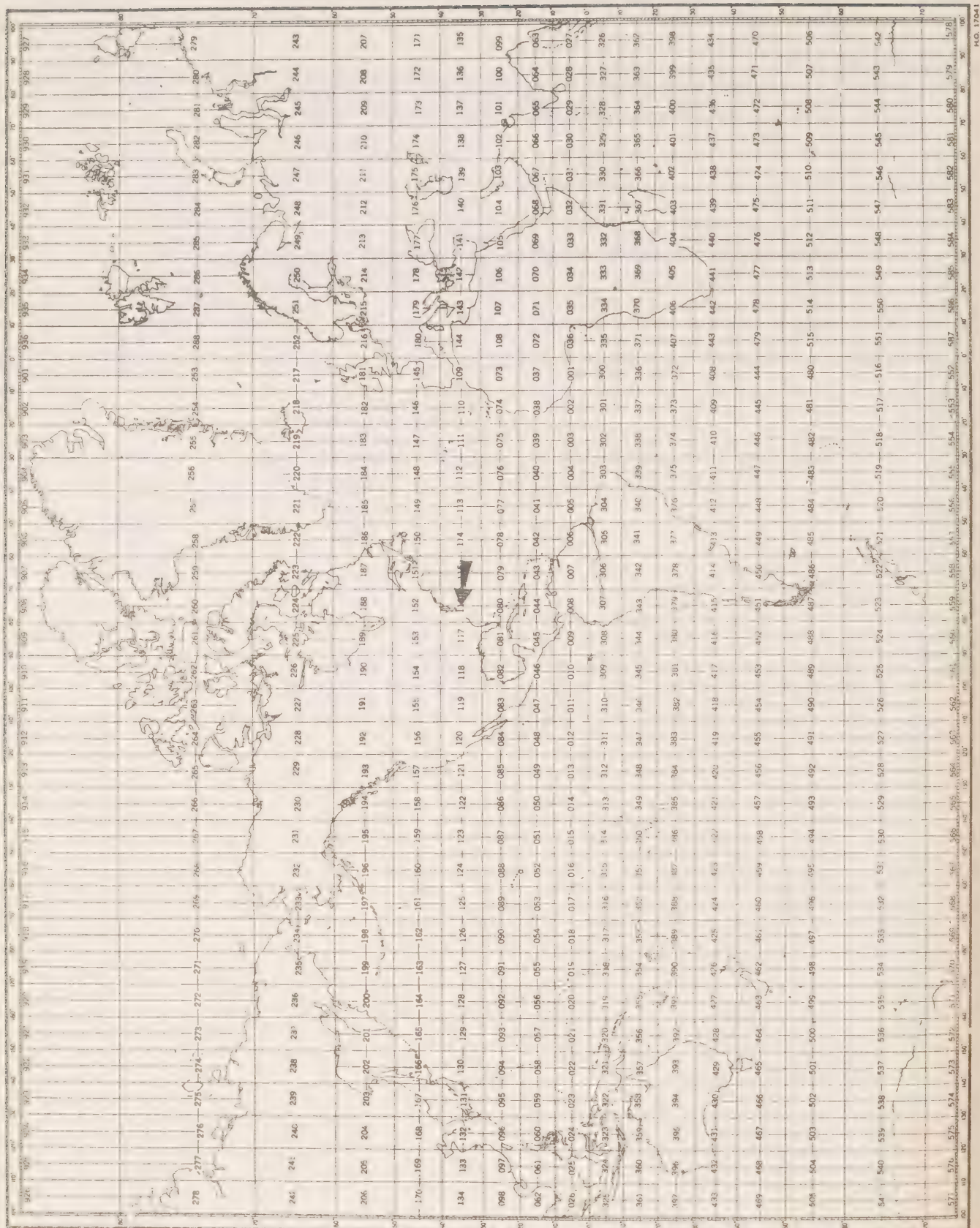
- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
 - (i) the interpolation error estimate is less than twice the standard deviation of measurement
 - the interpolated value is reported to three decimal places (e.g., 30.139).
 - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 - the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 - the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section I of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^p \delta dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = 1/g \int_0^p p \delta dp = \int_0^z \rho p \delta dz$$
- χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.p}$$
- δ is expressed in ml/gr, and conventionally reported as $10^6 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

* (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.



MARSDEN SQUARE CHART

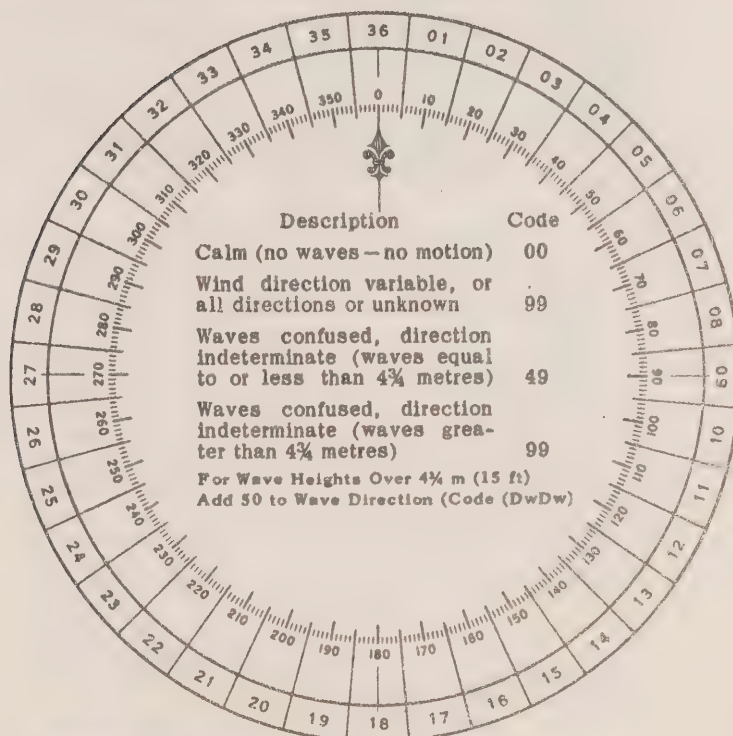
Table 1
CONVERSION
MINUTES TO $\frac{1}{4}_0$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)		4 7 m (22½ ft)
5	2½ m (8 ft)		5 7½ m (24 ft)
6	3 m (9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure		ww	
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
Haze, dust, sand or smoke	03	Clouds generally forming or developing	
	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no duststorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
ww = 20 - 29	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precipitation at the time of observation	
	18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
	20	Drizzle (not freezing) or snow grains	not falling as shower(s)
	21	Rain (not freezing)	
	22	Snow	
	23	Rain and snow or ice pellets, type (a)	
	24	Freezing drizzle or freezing rain	
ww = 30 - 39	25	Shower(s) of rain	
	26	Shower(s) of snow, or of rain and snow	
	27	Shower(s) of hail, or of rain and hail	
	28	Fog or ice fog	
	29	Thunderstorm (with or without precipitation)	
	30	Slight or moderate duststorm or sandstorm	- has decreased during the preceding hour
	31	Slight or moderate duststorm or sandstorm	
	32	Slight or moderate duststorm or sandstorm	- no appreciable change during the preceding hour
	33	Severe duststorm or sandstorm	- has begun or has increased during the preceding hour
	34	Severe duststorm or sandstorm	- has decreased during the preceding hour
ww = 40 - 49	35	Severe duststorm or sandstorm	- no appreciable change during the preceding hour
	36	Slight or moderate blowing snow	- has begun or has increased during the preceding hour
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	generally low (below eye level)
	39	Heavy blowing snow	
	40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	41	Fog or ice fog in patches	
	42	Fog or ice fog, sky visible	has become thinner during the preceding hour
	43	Fog or ice fog, sky invisible	
	44	Fog or ice fog, sky visible	no appreciable change during the preceding hour
	45	Fog or ice fog, sky invisible	
	46	Fog or ice fog, sky visible	has begun or has become thicker during the preceding hour
	47	Fog or ice fog, sky invisible	
	48	Fog, depositing rime, sky visible	
	49	Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | |
|----|--|--|
| 50 | Drizzle, not freezing, intermittent | } slight at time of observation |
| 51 | Drizzle, not freezing, continuous | |
| 52 | Drizzle, not freezing, intermittent | } moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | |
| 54 | Drizzle, not freezing, intermittent | } heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | |
| 56 | Drizzle, freezing, slight | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | |
| 58 | Drizzle and rain, slight | |
| 59 | Drizzle and rain, moderate or heavy | |

ww = 60 - 69 Rain

- | | | |
|----|---|-----------------------------------|
| 60 | Rain, not freezing, intermittent | } slight at time of observation |
| 61 | Rain, not freezing, continuous | |
| 62 | Rain, not freezing, intermittent | } moderate at time of observation |
| 63 | Rain, not freezing, continuous | |
| 64 | Rain, not freezing, intermittent | } heavy at time of observation |
| 65 | Rain, not freezing, continuous | |
| 66 | Rain, freezing, slight | |
| 67 | Rain, freezing, moderate or heavy | |
| 68 | Rain or drizzle and snow, slight | |
| 69 | Rain or drizzle and snow, moderate or heavy | |

70 - 79 Solid precipitation not in showers

- | | | |
|----|---|-----------------------------------|
| ww | | |
| 70 | Intermittent fall of snow flakes | } slight at time of observation |
| 71 | Continuous fall of snow flakes | |
| 72 | Intermittent fall of snow flakes | } moderate at time of observation |
| 73 | Continuous fall of snow flakes | |
| 74 | Intermittent fall of snow flakes | } heavy at time of observation |
| 75 | Continuous fall of snow flakes | |
| 76 | Ice prisms (with or without fog) | |
| 77 | Snow grains (with or without fog) | |
| 78 | Isolated starlike snow crystals (with or without fog) | |
| 79 | Ice pellets, type (a) | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | |
|----|--|---|
| 80 | Rain shower(s), slight | |
| 81 | Rain shower(s), moderate or heavy | |
| 82 | Rain shower(s), violent | |
| 83 | Shower(s) of rain and snow mixed, slight | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | |
| 85 | Snow shower(s), slight | |
| 86 | Snow shower(s), moderate or heavy | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain | } - slight |
| 88 | or rain and snow mixed | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | } - moderate or heavy |
| 90 | | |
| 91 | Slight rain at time of observation | } thunderstorm during the preceding hour but not at time of observation |
| 92 | Moderate or heavy rain at time of observation | |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation | |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | } thunderstorm at time of observation |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | |
| 99 | Thunderstorm, heavy, with hail at time of observation | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{8}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11

CCO Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, Ste. Anne de Bellevue, P.Q.
05. Biological Station, St. John's Nfld.
06. Station de Biologie Marine, Grande Riviere, P.Q.
07. Marine Sciences Branch, Central Region.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography, (MSB. Atlantic Region).
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Institute of Oceanography, University of British Columbia.
14. Institute of Oceanography, Dalhousie University.
15. Marine Sciences Branch, Pacific Region.
16. Department of Transport.
17. Marine Sciences Centre, McGill University.
18. RCN East Coast.
19. RCN West Coast.
20. Ontario Water Resources Commission.
21. Department of National Health and Welfare.
22. Water Research Branch, Dept. of Energy, Mines and Resources.

SECTION 111

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation Platform:</u>	CSS "BAFFIN"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number of stations occupied:</u>	22
<u>Surface Sea Water Temperature</u>	Bucket sample

The following Standard Deviations were used to express both measurement and interpolation error estimates.

Temperature	0.02
Salinity	0.005

C-REF-NO 028	YR 1964	DEPTH 4791	WAVES 1	XX	AIR T	VIS
CONS. NO 001	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	STN 001
LAT 36-440N	DAY 21	NO.DPTH 14	WND-DIR		WW-CODE	
LON 64-530W	HR 13.2	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
132	0000	228 B	36525		2517	15312
132	0010	2272	36496		2517	15311
132	0020	2273	36481		2515	15313
132	0030	2272	36488		2516	15315
132	0049	2270	36474		2516	15317
132	0074	2270	36493		2517	15322
132	0098	2266	36525		2521	15325
132	0148	2128	36694		2572	15300
132	0197	1953	36595		2612	15260
132	0295	1824	36524		2640	15239
132	0394	1791	36503		2646	15245
132	0493		36486			
132	0591		36441			
132	0689		36494			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2280 B	36525		2517	15312	0000	00000	2808
0010	2272	36496		2517	15311	0028	00001	2811
0020	2273	36481		2515	15313	0057	00006	2828
0030	2272	36488		2516	15315	0085	00013	2825
0050	2270	36474		2516	15317	0142	00036	2837
0075	2270	36494		2517	15322	0213	00082	2834
0100	2263	36533		2522	15324	0284	00146	2794
0125	2205 C	3663 D		2546	15315	0352	00223	2581
0150	2121	36692		2574	15298	0413	00310	2317
0175	2029 B	3665 C		2596	15277	0469	00403	2118
0200	1946	36591		2613	15258	0521	00501	1961
0225	1896 D	36564		2624	15248	0569	00606	1866
*0250	1859 D	36543		2632	15241	0615	00718	1799
0300	1790 I	36522		2648	15229	0702	00964	1664
0400		36502						
0500		36482						
0600		3646 C						

C-REF-NO 028	YR 1964	DEPTH 4242	WAVES 1	XX	AIR T	VIS
CONS. NO 002	MONTH 11	MXSAMPD 04	WAVES 2	XX	WET B	STN 002
LAT 39-190N	DAY 22	NO.DPTH 11	WND-DIR		WW-CODE	
LDN 66-180W	HR 04.2	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
042	0000	232 B	36128		2475	15318
042	0009	2327	36103		2471	15320
042	0018	2323	36105		2472	15321
042	0027	2306	36224		2486	15320
042	0045	2271				
042	0068	2271	36384		2509	15320
042	0091	2271	36443		2513	15324
042	0136	2098	36714		2582	15290
042	0181	1894	36536		2623	15240
042	0274	1770	36487		2650	15219
042	0368	1707	36413		2660	15215

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2320 B	36128		2475	15318	0000	00000	3205
0010	2327	36100		2471	15321	0032	00002	3249
0020	2320	36128		2475	15321	0065	00007	3212
0030	2299	3625 B		2490	15319	0097	00015	3073
0050	2269	3636 E		2507	15316	0157	00039	2919
0075	2274	36400		2509	15322	0230	00086	2912
0100	2247 C	3651 D		2525	15320	0302	00150	2770
0125	2152 C	3666 D		2563	15302	0367	00225	2416
0150	2031 B	3668 D		2598	15274	0424	00304	2096
0175	1919	3657 B		2619	15246	0474	00388	1901
0200	1850 E	3651 C		2632	15230	0520	00477	1783
0225	1807 G	3649 D		2641	15222	0564	00573	1704
*0250	1780 E	3648 C		2647	15218	0607	00676	1654
0300	1696 I	3640 H		2662	15200	0687	00901	1531

C-REF-NO 028	YR 1964	DEPTH 3895	WAVES 1	XX	AIR T	VIS
CONS. NO 003	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	STN 010
LAT 38-390N	DAY 23	NO.DPTH 12	WND-DIR		WW-CODE	
LON 68-060W	HR 17.9	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
179	0000	214 B	36469		2552	15276
179	0010	2209	36416		2529	15295
179	0050	2202	36435		2532	15300
179	0074	2178	36452		2540	15298
179	0099	1923	36571		2618	15235
179	0148	1801	36508		2644	15208
179	0198	1770	36496		2651	15207
179	0297	1686	36348		2660	15196
179	0396	1411	35836		2683	15121
179	0495	1058	35333		2713	15010
179	0593	0804	35089		2736	14929
179	0692	0608	34982		2755	14868

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2140 B	36469		2552	15276	0000	00000	2472
0010	2209	36416		2529	15295	0026	00001	2698
0020	2230 G	3640 C		2522	15302	0053	00006	2769
0030	2236 I	3640 C		2520	15305	0081	00013	2790
0050	2202	36435		2532	15300	0136	00035	2681
0075	2169 B	36457		2543	15295	0203	00078	2586
0100	1918	36571		2619	15234	0259	00127	1868
0125	1821 I	3656 D		2643	15210	0303	00178	1653
0150	1799	36507		2645	15207	0345	00236	1645
0175	1779 B	36501		2649	15206	0386	00304	1611
0200	1769	36496		2651	15207	0426	00382	1601
0225	1758 C	3648 B		2653	15207	0466	00470	1593
*0250	1740 C	3645 B		2655	15206	0506	00568	1580
0300	1680	36335		2660	15195	0585	00790	1542
0400	1397	35813		2684	15116	0730	01306	1335
0500	1043	35316		2714	15006	0850	01854	1047
0600	0782 B	3506 C		2737	14922	0945	02384	0828
0700	0596	34984		2757	14864	1019	02871	0629

C-REF-NO 028	YR 1964	DEPTH 4718	WAVES 1	XX	AIR T	VIS
CONS. NO 004	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	STN 012
LAT 37-260N	DAY 24	NO.DPTH 12	WND-DIR		WW-CODE	
LON 67-210W	HR 01.7	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
017	0000	203 B	35786		2530	15239
017	0010	2100	35644		2500	15257
017	0048	2099	35644		2501	15263
017	0072	1959	35262		2509	15225
017	0096	1973	35587		2530	15237
017	0144	1479	35462		2639	15097
017	0192	1347	35584		2677	15063
017	0288	1149	35391		2701	15009
017	0385	0955	35198		2720	14953
017	0480	0770	35065		2739	14897
017	0577	0636	35009		2753	14860
017	0673	0540	34988		2764	14837

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2030 B	35786		2530	15239	0000	00000	2682
0010	2100	35644		2500	15257	0028	00002	2968
0020	2133 C	3564 I		2491	15268	0059	00006	3062
0030	2143 C	3564 I		2488	15272	0090	00014	3092
0050	2086 B	3560 C		2501	15260	0151	00039	2976
0075	1961 C	3529 D		2510	15226	0225	00086	2895
0100	1938 G	3559 C		2539	15228	0294	00148	2628
0125	1695 I	3556 I		2597	15161	0353	00216	2082
0150	1452 C	3547 B		2646	15089	0400	00281	1623
0175	1372 G	3554 C		2668	15068	0438	00344	1423
0200	1329	3558 B		2680	15058	0473	00410	1312
0225	1274 B	3555 D		2689	15044	0505	00480	1232
*0250	1222 B	3550 E		2695	15029	0535	00554	1175
0300	1125	35366		2703	15002	0593	00716	1109
0400	0924	35173		2723	14944	0696	01081	0928
0500	0739	35049		2742	14888	0780	01469	0752
0600	0607	34993		2756	14852	0850	01858	0623

C-REF-NO 028	YR 1964	DEPTH 4864	WAVES 1	XX	AIR T	VIS
CONS. NO 005	MONTH 11	MXSAMPD 06	WAVES 2	XX	WET B	STN 014
LAT 36-065N	DAY 24	NO.DPTH 11	WND-DIR		WW-CODE	
LON 66-409W	HR 10.8	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	235 B	36348		2483	15327
108	0009	2329	36331		2488	15324
108	0047	2285	36451		2510	15320
108	0071	2270	36501		2518	15321
108	0094	2253				
108	0141	2225	36544		2534	15322
108	0188	1893	36577		2626	15241
108	0282	1800	36514		2645	15229
108	0376	1761	36485		2652	15233
108	0470	1727	36433		2657	15238
108	0564	1620	36214		2665	15219

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2350 B	36348		2483	15327	0000	00000	3129
0010	2327	36332		2488	15323	0031	00002	3081
0020	2311 B	3635 C		2495	15321	0062	00006	3027
*0030	2299 B	3638 C		2500	15320	0092	00014	2975
0050	2283	36458		2511	15320	0151	00038	2884
0075	2267	36505		2519	15321	0223	00084	2816
0100	2258 C	3653 B		2523	15323	0293	00147	2784
0125	2251 F	36541		2526	15326	0363	00228	2767
0150	2166 F	36552		2551	15308	0430	00321	2539
0175	1991 H	36570		2600	15266	0488	00417	2079
0200	1858 G	36573		2635	15233	0536	00510	1758
0225	1808 I	3656 B		2646	15223	0579	00603	1654
*0250	1786 I	3654 B		2651	15220	0620	00704	1623
0300	1790	36508		2647	15229	0704	00939	1676
0400	1756 B	36481		2653	15235	0871	01540	1647
0500	1688 C	3636 C		2660	15230	1036	02299	1611

C-REF-NO 028	YR 1964	DEPTH 3657	WAVES 1	XX	AIR T	VIS
CONS. NO 006	MONTH 11	MXSAMPD 06	WAVES 2	XX	WET B	STN 016
LAT 38-140N	DAY 25	NO.DPTH 12	WND-DIR		WW-CODE	
LUN 69-190W	HR 06.6	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	213 B	35739		2499	15265
066	0010	2127	35649		2493	15265
066	0048	1865	34965		2510	15191
066	0073	1550	34269		2532	15093
066	0086	1755	35580		2584	15173
066	0120	1465	35672		2658	15091
066	0164	1388	35636		2672	15073
066	0242	1119	35425		2709	14992
066	0320	0901	35130		2724	14922
066	0398	0779	35079		2739	14888
066	0477	0554	34893		2755	14809
066	0556	0507	34910		2762	14803

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2130 B	35739		2499	15265	0000	00000	2974
0010	2127	35649		2493	15265	0030	00002	3035
0020	2090 C	35517		2493	15255	0061	00006	3037
0030	2030 C	35351		2497	15239	0091	00014	3008
0050	1825 F	3484 I		2510	15178	0150	00038	2885
0075	1579 E	3446 H		2540	15104	0220	00082	2612
0100	1696 I	3592 I		2624	15162	0275	00131	1817
0125	1449 C	35674		2662	15086	0317	00178	1465
0150	1397 G	35660		2672	15074	0352	00228	1375
0175	1354 B	35614		2678	15063	0386	00285	1328
0200	1271 E	35556		2690	15039	0419	00347	1217
*0225	1183 C	35483		2702	15012	0448	00410	1110
0250	1093	35391		2711	14983	0475	00476	1022
0300	0950	3520 B		2721	14937	0524	00614	0931
0400	0773	35074		2739	14885	0610	00918	0766
0500	0569 I	3493 F		2756	14820	0679	01234	0603

C-REF-NO 028	YR 1964	DEPTH 4700	WAVES 1	XX	AIR T	
CONS. NO 007	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	
LAT 36-562N	DAY 25	NO.DPTH 12	WND-DIR		WW-CODE	
LON 68-293W	HR 14.7	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
147	0000	212 B	35825		2509	15263
147	0010	2025	35234		2489	15232
147	0049	2065	35486		2498	15253
147	0074	1992	35390		2510	15236
147	0098	1901	35728		2559	15219
147	0148	1578	35957		2655	15134
147	0197	1367	35740		2685	15072
147	0295	1122	35391		2706	15001
147	0394	0929	35175		2723	14945
147	0493	0761	35036		2738	14896
147	0591	0593	35004		2759	14845
147	0688	0497	34955		2766	14822

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN
0000	2120 B	35825		2509	15263	0000	00000
0010	2025	35234		2489	15232	0030	00002
0020	2013 I	35113 I		2484	15230	0061	00006
0030	2016 I	35114 I		2484	15232	0093	00014
0050	2063	35480		2498	15252	0154	00040
0075	1989	35401		2512	15235	0228	00087
0100	1889	35748		2564	15216	0295	00146
0125	1731 F	3592 B		2616	15176	0349	00207
0150	1568	35952		2657	15131	0392	00267
0175	1452	3586 D		2676	15098	0428	00327
0200	1357	35727		2686	15070	0461	00390
0225	1282 C	35628		2693	15047	0492	00458
*0250	1217 D	35536		2699	15028	0521	00529
0300	1111	35378		2707	14998	0577	00687
0400	0918	35164		2724	14942	0678	01046
0500	0748	35032		2740	14892	0764	01440
0600	0594 D	3498 C		2757	14847	0835	01834

C-REF-NO 028	YR 1964	DEPTH 4864	WAVES 1	XX	AIR T	VIS
CONS. NO 008	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	STN 020
LAT 35-412N	DAY 25	NO. DPTH 12	WND-DIR		WW-CODE	
LCN 67-460W	HR 22.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SGUND
220	0000	242 B	36379		2465	15345
220	0009	2407	36339		2465	15343
220	0047	2407	36349		2466	15349
220	0071	2316	36402		2497	15331
220	0094	2284	36429		2508	15328
220	0141	2222	36483		2530	15320
220	0188	1981	36619		2606	15266
220	0282	1846	36546		2636	15243
220	0376	1794	36500		2645	15243
220	0470	1750	36433		2651	15245
220	0564	1686	36328		2658	15240
220	0657		35968			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	2420 B	36379		2465	15345	0000	00000	3305
0010	2408	36337		2465	15343	0033	00002	3304
0020	2412 E	3632 B		2463	15345	0067	00007	3329
*0030	2412 F	3632 B		2462	15347	0100	00015	3337
0050	2396	36355		2470	15347	0167	00043	3274
0075	2308	36408		2500	15330	0245	00093	3001
0100	2281 B	36434		2509	15328	0320	00159	2916
0125	2253 D	36460		2520	15325	0392	00242	2830
0150	2178 D	36510		2544	15311	0460	00338	2602
0175	2051 E	3658 B		2585	15282	0521	00439	2224
0200	1949 D	3662 B		2615	15259	0574	00540	1945
0225	1895 H	3662 D		2629	15248	0621	00643	1826
*0250	1861 G	3660 D		2636	15243	0666	00753	1767
0300	1833	36537		2638	15242	0755	01004	1757
0400	1783	36486		2647	15244	0930	01630	1710
0500	1727	3642 B		2655	15243	1100	02415	1661
0600		3618 D						

C-REF-NO 028	YR 1964	DEPTH 3895	WAVES 1	XX	AIR T	VIS
CONS. NO 009	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	STN 025
LAT 38-385N	DAY 28	NO.DPTH 12	WND-DIR		WW-CODE	
LON 68-070W	HR 17.9	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
179	0000	208 B	36057		2537	15255
179	0010	2107	36082		2532	15264
179	0049	2008	36400		2583	15248
179	0074	2164	36449		2544	15294
179	0098	1976	36596		2606	15250
179	0148	1811	36525		2643	15211
179	0197	1767	36489		2651	15206
179	0295	1663	36293		2661	15188
179	0394	1356	35738		2687	15101
179	0493	0989	35266		2720	14984
179	0591	0753	35014		2737	14909
179	0689	0602	35011		2758	14865

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2080 B	36057		2537	15255	0000	00000	2614
0010	2107	36082		2532	15264	0027	00001	2669
0020	2077 I	3616 D		2546	15259	0053	00005	2539
0030	2050 I	3624 E		2559	15254	0078	00012	2415
0050	2016 B	36402		2581	15250	0124	00031	2219
0075	2159 B	36455		2546	15293	0184	00070	2561
0100	1965	36598		2609	15247	0241	00120	1968
0125	1860 D	3659 E		2635	15222	0288	00173	1726
0150	1808	36524		2644	15210	0331	00233	1655
0175	1780 C	36506		2649	15206	0372	00302	1610
0200	1765	36487		2651	15206	0412	00379	1598
0225	1749 C	3646 B		2653	15204	0452	00467	1587
*0250	1724 D	3642 B		2656	15201	0492	00564	1571
0300	1651	36268		2662	15185	0570	00784	1525
0400	1333	35705		2689	15094	0712	01287	1284
0500	0969	35240		2721	14978	0826	01806	0974
0600	0728 B	35009		2741	14900	0914	02302	0783

C-REF-NO 028	YR 1964	DEPTH 4901	WAVES 1	XX	AIR T	VIS
CONS. NO 010	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	STN 029
LAT 36-029N	DAY 29	NO.DPTH 12	WND-DIR		WW-CODE	
LON 66-450W	HR 10.6	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
106	0000	231 B	36433		2501	15319
106	0010	2317	36396		2496	15322
106	0049	2317	36400		2496	15328
106	0074	2317	36399		2496	15332
106	0098	2295	36603		2518	15333
106	0148		36617			
106	0197	1922	36577		2619	15251
106	0295	1820	36511		2640	15237
106	0394	1777	36480		2648	15241
106	0493	1745	36446		2653	15247
106	0591	1667	36289		2660	15238
106	0689		35944			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2310 B	36433		2501	15319	0000	00000	2957
0010	2317	36396		2496	15322	0030	00002	3007
0020	2319	3639 B		2495	15324	0060	00006	3024
0030	2320 B	3638 B		2494	15325	0091	00014	3031
0050	2317	36398		2496	15328	0152	00039	3022
0075	2317	36407		2497	15332	0228	00088	3024
0100	2288 B	36609		2521	15332	0301	00153	2810
0125	2202 I	3665 D		2548	15315	0369	00231	2557
0150	2110 I	36616		2571	15294	0430	00317	2346
0175	2013 I	36598		2596	15272	0486	00410	2116
0200	1916	36575		2620	15250	0537	00507	1899
0225	1876 D	36555		2629	15242	0584	00609	1823
*0250	1847 D	36538		2635	15238	0629	00720	1773
0300	1817	36509		2640	15237	0718	00969	1739
0400	1776	36480		2648	15241	0891	01591	1696
0500	1731 C	36440		2656	15244	1060	02370	1653
0600		3625 B						

C-REF-NO 028	YR 1964	DEPTH 3712	WAVES 1	XX	AIR T	VIS
CONS. NO 011	MONTH 11	MXSAMPD 06	WAVES 2	XX	WET B	STN 033
LAT 38-105N	DAY 30	NO.DPTH 12	WND-DIR		WW-CODE	
LON 69-160W	HR 06.5	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
065	0000	237 B	35750		2432	15326
065	0009	2236	35724		2469	15293
065	0045	2235	36732		2545	15311
065	0069	1983	35145		2494	15230
065	0093	1872	35153		2523	15203
065	0130	1412	35328		2643	15071
065	0170	1329	35685		2688	15055
065	0250	1003				
065	0333	0847	35126		2732	14903
065	0420	0682	35032		2749	14853
065	0507	0582	35077		2766	14828
065	0596	0515	35022		2770	14815

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2370 B	35750		2432	15326	0000	00000	3617
0010	2233 C	3577 E		2473	15293	0034	00002	3231
0020	2214 I	3615 I		2507	15295	0065	00006	2906
*0030	2211 I	3645 I		2531	15299	0093	00013	2685
0050	2185 E	3641 I		2535	15295	0147	00035	2653
0075	1956 E	3507 I		2495	15222	0219	00082	3041
0100	1784 I	35173		2546	15179	0289	00144	2561
0125	1474 G	35294		2627	15090	0344	00206	1792
0150	1347 I	3551 C		2671	15055	0384	00262	1386
0175	1309 B	3569 D		2692	15049	0416	00316	1187
0200	1209 H	3569 I		2712	15019	0444	00369	1005
*0225	1107 G	3565 I		2729	14987	0467	00420	0851
0250	1003	3558 I		2742	14953	0487	00468	0726
0300	0898 D	3535 I		2741	14920	0524	00572	0736
0400	0717	35041		2745	14863	0597	00834	0710
0500	0588	35073		2765	14829	0660	01118	0525
0600	0513	35022		2770	14815	0710	01404	0480

C-REF-NO 028	YR 1964	DEPTH 4681	WAVES 1	XX	AIR T	VIS
CONS. NO 012	MONTH 11	MXSAMPD 06	WAVES 2	XX	WET B	STN 035
LAT 36-544N	DAY 30	NO.DPTH 12	WND-DIR		WW-CODE	
LON 68-274W	HR 15.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
150	0000	254 B	36084		2406	15370
150	0008	2522	36289		2427	15369
150	0041	2523	36308		2428	15375
150	0062	2526	36299		2426	15379
150	0083	2526	36299		2426	15383
150	0125	2345	36761		2516	15352
150	0165	2184	36781		2563	15318
150	0249	1918	36603		2622	15259
150	0333	1804	36499		2643	15239
150	0414	1735	36400		2652	15231
150	0495	1552	35906		2657	15183
150	0581	1197				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2540 B	36084		2406	15370	0000	00000	3864
0010	2520	3631 C		2429	15369	0038	00002	3648
0020	2515 C	3638 I		2435	15370	0074	00007	3590
*0030	2516 C	3638 I		2435	15372	0110	00017	3594
0050	2524	36305		2427	15377	0183	00047	3680
0075	2530	36289		2424	15382	0276	00106	3717
0100	2467 E	3648 I		2458	15373	0366	00186	3409
0125	2345	36761		2516	15352	0445	00276	2868
0150	2242	3680 C		2548	15331	0513	00372	2565
0175	2146	3677 B		2573	15310	0575	00475	2341
0200	2058	3672 C		2594	15290	0631	00583	2153
*0225	1981	3667 C		2610	15273	0684	00697	2005
0250	1916	36602		2622	15258	0733	00816	1897
0300	1837 B	36535		2637	15243	0825	01076	1769
0400	1750 B	3643 B		2651	15233	0999	01696	1669
0500	1530 B							

C-REF-NO 028	YR 1964	DEPTH 4882	WAVES 1	XX	AIR T	VIS
CONS. NO 013	MONTH 11	MXSAMPD 07	WAVES 2	XX	WET B	STN 037
LAT 35-431N	DAY 30	NO.DPTH 12	WND-DIR		WW-CODE	
LON 67-440W	HR 22.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0000	223 B	36462		2526	15299
220	0010		36436			
220	0050	2241	36440		2521	15310
220	0075	2247	36440		2520	15315
220	0100	2218	36618		2541	15314
220	0150	1963	36614		2611	15255
220	0200	1867	36556		2631	15236
220	0300	1798	36517		2646	15232
220	0400	1779	36505		2649	15243
220	0500	1756	36474		2653	15252
220	0600	1661	36270		2660	15238
220	0700		35952			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2230 B	36462		2526	15299	0000	00000	2717
0010	2238 B	36436		2522	15302	0028	00001	2762
0020	2244 B	3643 B		2520	15305	0055	00006	2787
0030	2248 C	3643 B		2518	15308	0084	00013	2803
0050	2241	36440		2521	15310	0140	00036	2783
0075	2247	36440		2520	15315	0210	00081	2809
0100	2218	36618		2541	15314	0278	00142	2612
0125	2097 I	3665 D		2578	15287	0340	00212	2277
0150	1963	36614		2611	15255	0393	00287	1969
0175	1903 C	36587		2624	15242	0441	00367	1847
0200	1867	36556		2631	15236	0487	00455	1791
0225	1840 B	36540		2637	15232	0532	00552	1745
0250	1819 C	36528		2641	15230	0575	00658	1713
0300	1798	36517		2646	15232	0661	00900	1688
0400	1779	36505		2649	15243	0831	01512	1686
0500	1756	36474		2653	15252	1001	02298	1687
0600	1661	36270		2660	15238	1169	03247	1644
0700		35952						

C-REF-NO 028	YR 1964	DEPTH 4901	WAVES 1	XX	AIR T	VIS
CONS. NO 014	MONTH 12	MXSAMPD 04	WAVES 2	XX	WET B	STN 038
LAT 35-330N	DAY 01	NO.DPTH 12	WND-DIR		WW-CODE	
LON 68-265W	HR 01.7	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
017	0000	239 B	36337		2470	15337
017	0029	2346	36338		2483	15331
017	0052	2348	36340		2483	15335
017	0066	2346	36342		2484	15337
017	0080	2348	36338		2483	15340
017	0109	2341	36335		2485	15343
017	0138	2266	36703		2534	15333
017	0195	1920	36602		2621	15250
017	0253	1841	36546		2637	15237
017	0309	1806	36529		2644	15236
017	0367		36514			
017	0425		36495			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2390 B	36337		2470	15337	0000	00000	3250
0010	2374 B	36337		2475	15335	0032	00002	3209
0020	2361 B	36337		2479	15333	0065	00007	3177
0030	2346	36338		2483	15331	0096	00015	3137
0050	2347	36340		2483	15335	0160	00041	3148
0075	2347	36340		2483	15339	0239	00091	3158
0100	2348	3632 C		2481	15343	0319	00163	3186
0125	2308	3653 E		2509	15340	0395	00251	2930
0150	2193 G	3673 F		2557	15317	0464	00347	2487
0175	2041 I	3670 I		2596	15281	0522	00443	2117
0200	1907 B	36595		2624	15247	0572	00538	1861
0225	1859 E	36568		2634	15238	0617	00638	1773
*0250	1841	36548		2637	15236	0662	00746	1752
0300	1796 C	36530		2647	15231	0748	00989	1672
0400		36503						

C-REF-NO 028	YR 1964	DEPTH 3840	WAVES 1	XX	AIR T	VIS
CONS. NO 015	MONTH 12	MXSAMPD 05	WAVES 2	XX	WET B	STN 040
LAT 37-577N	DAY 02	NO-DPTH 12	WND-DIR		WW-CODE	
LON 69-430W	HR 20.5	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
205	0000	239 B	36535		2485	15339
205	0008	2389	36381		2474	15339
205	0040	2388	36391		2475	15344
205	0064	2390	36392		2474	15348
205	0085	2385	36427		2479	15351
205	0136	2152	36746		2570	15305
205	0173	1905	36560		2622	15242
205	0246	1699				
205	0320	1559	36047		2666	15158
205	0392	1301	35627		2689	15081
205	0466	1077	35330		2709	15012
205	0539	0882	35120		2726	14950

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	2390 B	36535		2485	15339	0000	00000	3107
0010	2389	3637 B		2473	15339	0032	00002	3229
0020	2388	3633 H		2470	15340	0064	00007	3260
*0030	2388	3634 G		2471	15341	0097	00015	3257
0050	2389	36389		2474	15346	0162	00042	3230
0075	2391	36405		2475	15350	0244	00094	3234
0100	2339 C	3654 G		2500	15343	0322	00164	3002
0125	2221 C	3669 F		2546	15320	0392	00244	2576
0150	2057 C	3670 C		2592	15281	0452	00327	2149
0175	1896	36553		2623	15240	0502	00411	1856
0200	1803 F	3647 D		2641	15216	0547	00497	1700
*0225	1736 E	3638 F		2651	15200	0589	00587	1611
0250	1692	3630 G		2655	15190	0629	00685	1582
0300	1600 C	3612 C		2663	15168	0707	00905	1518
0400	1275	35590		2692	15073	0847	01401	1253
0500	0981	35214		2717	14982	0961	01924	1013

C-REF-NO 028	YR 1964	DEPTH 3127	WAVES 1	XX	AIR T	VIS
CONS. NO 016	MONTH 12	MXSAMPD 07	WAVES 2	XX	WET B	STN 061
LAT 36-557N	DAY 05	NO.DPTH 12	WND-DIR		WW-CODE	
LON 72-379W	HR 19.8	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 116	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	186 B	35480		2551	15188
198	0009	1906	35660		2553	15205
198	0047	1904	35685		2555	15210
198	0071	1214	35217		2675	14994
198	0094	1204	35405		2691	14997
198	0141	1150	35455		2706	14986
198	0188	0992	35269		2719	14935
198	0282	0790	35020		2732	14872
198	0376	0659	35043		2753	14837
198	0470	0550	35029		2766	14808
198	0565	0510	35052		2773	14808
198	0660	0471	35018		2774	14807

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1860 B	35480		2551	15188	0000	00000	2484
0010	1917 B	35674		2551	15208	0025	00001	2483
0020	1990 I	3578 B		2540	15231	0051	00005	2596
*0030	2007 I	3581 B		2538	15238	0077	00012	2621
0050	1813 I	3562 D		2573	15184	0126	00032	2289
0075	1190 H	3523 D		2681	14986	0171	00059	1269
0100	1201	35430		2694	14997	0201	00086	1151
0125	1177	3548 B		2702	14993	0230	00118	1078
0150	1122 B	3543 B		2709	14978	0256	00156	1023
0175	1039 C	3533 B		2716	14951	0281	00197	0955
0200	0960	35225		2721	14925	0304	00242	0907
0225	0899 B	35145		2725	14906	0327	00291	0874
*0250	0846 B	35080		2729	14889	0349	00344	0844
0300	0761	3502 B		2736	14864	0389	00459	0775
0400	0627	35039		2757	14828	0458	00701	0587
0500	0534 B	35037		2769	14807	0512	00948	0481
0600	0484 C	3503 B		2774	14803	0559	01210	0437

C-REF-NO 028	YR 1964	DEPTH 4096	WAVES 1	XX	AIR T	VIS
CONS. NO 017	MONTH 12	MXSAMPD 06	WAVES 2	XX	WET B	STN 063
LAT 35-430N	DAY 06	NO.DPTH 12	WND-DIR		WW-CODE	
LON 71-515W	HR 03.7	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 116	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
037	0000	253 B	36110		2411	15368
037	0009	2488	36278		2436	15361
037	0045	2492	36279		2435	15368
037	0068	2485	36277		2437	15370
037	0091	2425	36345		2460	15361
037	0136	2211	36529		2537	15317
037	0181	2010	36635		2600	15273
037	0273	1829	36532		2639	15237
037	0367	1785	36489		2647	15239
037	0453	1753	36465		2653	15243
037	0544	1619	36199		2664	15215
037	0634		35879			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2530 B	36110		2411	15368	0000	00000	3816
0010	2486	36285		2437	15361	0037	00002	3567
0020	2476 E	3634 H		2444	15361	0073	00007	3504
*0030	2475 F	3634 I		2445	15362	0108	00016	3499
0050	2493	36276		2435	15369	0179	00046	3610
0075	2471	36293		2443	15368	0269	00103	3544
0100	2387 B	36382		2475	15353	0355	00179	3248
0125	2269 B	36485		2517	15329	0431	00267	2855
0150	2144	36572		2559	15303	0498	00361	2466
0175	2034	36626		2593	15278	0556	00457	2150
0200	1954 C	3663 C		2614	15261	0608	00556	1955
0225	1896 D	3661 D		2628	15248	0656	00660	1832
*0250	1853 C	3658 C		2636	15240	0701	00770	1762
0300	1809 B	36516		2643	15235	0789	01017	1714
0400	1778 B	3649 B		2649	15242	0960	01633	1692
0500	1681 D	3635 B		2661	15228	1127	02399	1603
0600		3603 B						

C-REF-NO 028	YR 1964	DEPTH 4754	WAVES 1	XX	AIR T	VLS
CONS. NO 018	MONTH 12	MXSAMPD 06	WAVES 2	XX	WET B	STN 065
LAT 34-305N	DAY 06	NO.DPTH 12	WND-DIR		WW-CODE	
LOX 71-092W	HR 12.7	W-COLOR	WND-SPD		CLD-TPE	
MAKSD SQ 116	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
127	0000	234 B	36333		2485	15325
127	0009	2333	36360		2489	15325
127	0045	2335	36365		2489	15331
127	0068	2334	36372		2489	15335
127	0091	2325	36399		2494	15337
127	0136	2302	36418		2502	15339
127	0181	2159	36715		2565	15313
127	0273	1885	36567		2627	15253
127	0367	1809	36521		2643	15246
127	0453	1783	36509		2649	15253
127	0544	1763	36496		2653	15262
127	0634		36404			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2340 B	36333		2485	15325	0000	00000	3112
0010	2333	36361		2489	15325	0031	00002	3076
0020	2331 B	3637 B		2490	15326	0062	00006	3070
*0030	2332 B	3637 B		2490	15328	0093	00014	3072
0050	2335	36366		2489	15332	0155	00040	3095
0075	2332	36380		2491	15336	0233	00089	3086
0100	2325 B	3639 B		2494	15338	0310	00159	3068
0125	2313 B	3640 B		2498	15340	0387	00247	3038
0150	2264 B	3651 D		2520	15333	0461	00351	2834
0175	2181 B	3667 B		2556	15318	0528	00462	2502
0200	2093 C	3672 F		2584	15299	0588	00577	2244
0225	2014 D	3670 I		2604	15282	0642	00695	2063
*0250	1943 C	3665 G		2618	15266	0692	00817	1932
0300	1850 C	36547		2635	15247	0786	01081	1792
0400	1796	36515		2646	15248	0963	01715	1720
0500	1766	36507		2653	15255	1135	02509	1688
0600		36439						

C-REF-NO 028	YR 1964	DEPTH 4901	WAVES 1	XX	AIR T	VIS
CONS. NO 019	MONTH 12	MXSAMPD 06	WAVES 2	XX	WET B	STN 066
LAT 35-290N	DAY 07	NO.DPTH 11	WND-DIR		WW-CODE	
LON 68-250W	HR 05.5	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
055	0000	217 B	36463		2543	15284
055	0009	2174	36463		2542	15286
055	0047	2176	36472		2542	15293
055	0071	2182	36486		2542	15299
055	0094	2175	36501		2545	15301
055	0141	2099	36703		2581	15291
055	0188	1930	36597		2618	15252
055	0282	1821	36515		2640	15235
055	0376	1779	36475		2647	15238
055	0470	1756	36458		2651	15247
055	0564	1697	36333		2656	15244

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2170 B	36463		2543	15284	0000	00000	2556
0010	2174	36463		2542	15286	0026	00001	2571
0020	2175	36464		2542	15288	0052	00005	2577
*0030	2176 B	36466		2542	15290	0078	00012	2581
0050	2177	36474		2542	15294	0130	00033	2586
0075	2182	36487		2542	15299	0195	00075	2600
0100	2170	3653 B		2548	15301	0260	00133	2547
0125	2135	3664 D		2566	15297	0322	00204	2384
0150	2067 B	3669 B		2589	15284	0379	00285	2178
0175	1978 C	3664 B		2609	15263	0432	00372	1996
0200	1906 B	36581		2623	15247	0480	00466	1869
0225	1865 E	36552		2631	15239	0526	00566	1798
*0250	1837 E	36531		2637	15235	0571	00676	1755
0300	1810	36505		2642	15235	0659	00923	1725
0400	1774	36475		2648	15241	0831	01542	1696
0500	1732 C	3641 B		2653	15244	1002	02328	1678

C-REF-NO 028	YR 1964	DEPTH 3803	WAVES 1	XX	AIR T	VIS
CONS. NO 020	MONTH 12	MXSAMPD 06	WAVES 2	XX	WET B	STN 068
LAT 38-000N	DAY 07	NO.DPTH 12	WND-DIR		WW-CODE	
LON 69-382W	HR 20.6	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 115	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
206	0000	239 B	36355		2472	15337
206	0009	2369	36266		2471	15333
206	0045	2368	36264		2471	15338
206	0068	2367	36268		2472	15342
206	0091	2392	36696		2497	15357
206	0136	2190	36757		2560	15315
206	0181	1948	36602		2614	15256
206	0273	1579	36066		2663	15156
206	0367	1426	35950		2688	15122
206	0453	1303	35663		2692	15092
206	0544	1212				
206	0634		35302			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2390 B	36355		2472	15337	0000	00000	3237
0010	2368	36262		2471	15333	0033	00002	3246
0020	2362 C	3624 D		2471	15332	0065	00007	3252
*0030	2360 C	3623 E		2471	15334	0098	00015	3256
0050	2367	3625 C		2470	15339	0164	00042	3269
0075	2378 B	3639 E		2478	15347	0245	00094	3207
0100	2366 D	3676 D		2509	15353	0322	00163	2921
0125	2257 E	3680 E		2544	15330	0391	00242	2596
0150	2115 B	36724		2578	15297	0453	00328	2279
0175	1980	36631		2608	15264	0507	00418	2009
0200	1856	3649 D		2629	15232	0555	00510	1815
0225	1747	3634 F		2644	15203	0599	00605	1672
*0250	1653	3619 E		2656	15177	0640	00705	1568
0300	1522 D	3602 D		2673	15143	0715	00916	1420
0400	1376	3585 B		2691	15110	0851	01400	1268
0500	1254	3563 H		2699	15083	0976	01977	1213
0600		3539 C						

C-REF-NO 028	YR 1964	DEPTH 3255	WAVES 1	XX	AIR T	VIS
CONS. NO 021	MONTH 12	MXSAMPD 07	WAVES 2	XX	WET B	.STN 089
LAT 36-500N	DAY 10	NO.DPTH 11	WND-DIR		WW-CODE	
LON 72-340W	HR 18.9	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 116	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	135 B	34322		2579	15017
189	0049	1418	34451		2574	15049
189	0074	1182	35041		2667	14981
189	0099	1183	35352		2691	14990
189	0148	1063	35293		2709	14955
189	0198	0971	35199		2718	14928
189	0296	0711	34944		2738	14843
189	0395	0584	35017		2761	14810
189	0493	0515	35004		2768	14798
189	0592	0695	35035		2747	14886
189	0689	0454	34999		2775	14805

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1350 B	34322		2579	15017	0000	00000	2219
0010	1350 I	3435 H		2580	15019	0022	00001	2205
0020	1346 I	3439 I		2584	15020	0044	00005	2171
*0030	1339 I	3445 I		2590	15020	0066	00010	2116
0050	1408 B	34474		2578	15046	0110	00028	2236
0075	1180	35058		2669	14981	0155	00056	1379
0100	1181	35355		2692	14989	0187	00084	1169
0125	1128 D	3538 G		2704	14975	0215	00117	1062
0150	1059	35290		2709	14954	0242	00154	1014
0175	1013	35246		2714	14940	0267	00195	0973
0200	0966	35193		2718	14927	0291	00242	0940
0225	0898 D	3512 C		2723	14905	0314	00292	0892
*0250	0831 E	3505 D		2728	14883	0336	00345	0845
0300	0704	34945		2739	14841	0376	00458	0746
0400	0577	35017		2762	14808	0441	00686	0538
0500	0531 D	35007		2767	14805	0493	00928	0501
0600	0576 I	3502 B		2762	14840	0547	01234	0565

C-REF-NO 028	YR 1964	DEPTH 4809	WAVES 1	XX	AIR T	VIS
CONS. NO 022	MONTH 12	MXSAMPD 07	WAVES 2	XX	WET B	STN 093
LAT 34-244N	DAY 11	NO.DPTH 12	WND-DIR		WW-CODE	
LCN 71-103W	HR 08.8	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 116	C/I 1810	W-TRNSP	BARO		CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
088	0000	230 B	36214		2487	15314
088	0010		36393		2506	15313
088	0049		36386		2505	15320
088	0074		36429		2515	15318
088	0098		36451		2521	15319
088	0148		36532		2536	15320
088	0197		36638		2605	15271
088	0295		36525		2634	15245
088	0394		36501		2643	15249
088	0493		36477		2661	15241
088	0591		36448			
088	0689		36124			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	2300 B	36214		2487	15314	0000	00000	3087
0010		36393		2506	15313	0030	00002	2913
0020	2279 C	3644 H		2510	15314	0059	00006	2875
0030	2279 D	3645 I		2512	15316	0088	00013	2868
0050	2283	36388		2505	15320	0147	00037	2936
0075	2259	36430		2515	15318	0219	00084	2850
0100	2248	36454		2521	15320	0290	00148	2811
0125	2242 D	36490		2525	15323	0361	00229	2780
0150	2207	36537		2539	15319	0429	00325	2659
0175	2097 F	36595		2573	15295	0492	00429	2335
0200	1983	36637		2607	15269	0547	00534	2021
0225	1924 E	3662 D		2622	15257	0596	00641	1893
*0250	1882 F	3660 D		2631	15249	0643	00755	1816
0300	1845	36523		2634	15245	0734	01012	1797
0400	1777 G	36500		2650	15242	0910	01640	1684
0500		36480						
0600		3638 F						

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CANADA



OCEAN WEATHER STATION 'P' NORTH PACIFIC OCEAN

December 11, 1965, to March 9, 1966

No. 8

1966 Data Record Series



Canadian Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1966

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FISHERIES RESEARCH BOARD OF CANADA

Ocean Weather Station "P" North Pacific Ocean

Ships:	CCGS "St. Catharines"	CCGS "Stonetown"
Local Cruise designations:	P-65-5	Patrol No. 68
Cruise periods:	Dec. 11, 1965 - Jan. 19, 1966	Jan. 22 - Mar. 9, 1966
Observer:	K. Gantzer	

PACIFIC OCEANOGRAPHIC GROUP - Nanaimo, B.C.

SECTION I

Description of data collection procedures



Figure 1.

The Canadian Weather Ship C.C.G.S. " St. Catharines ". (D.O.T. Photo)

The oceanographic winch is located on the starboard side of the signal deck, just aft of the bridge wing.



Figure 2.

The Canadian Weather Ship C.C.G.S. "Stonetown".

(D.O.T. Photo)

Bathythermograph soundings boom can be seen below the bridge on the signal deck.

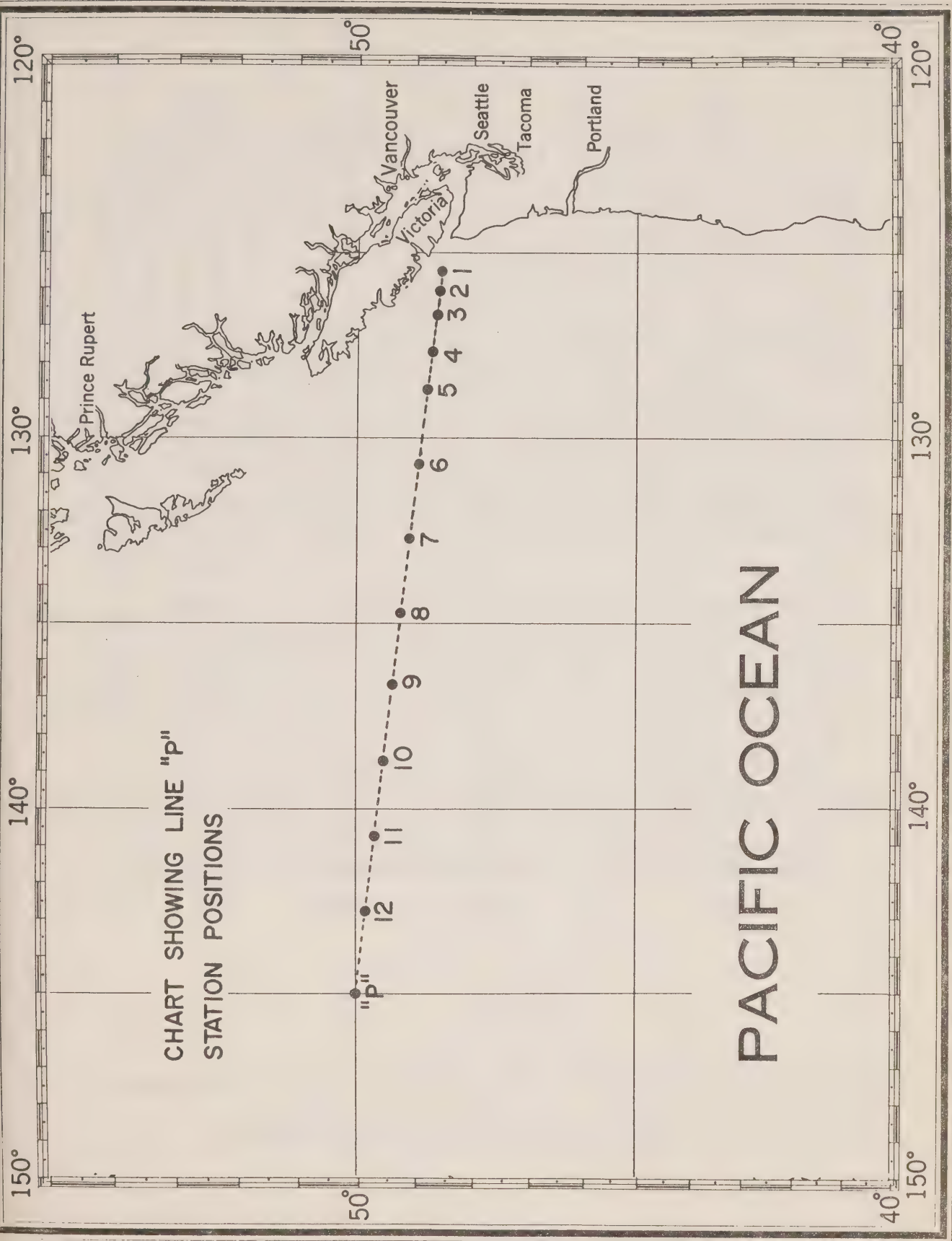


Figure 3

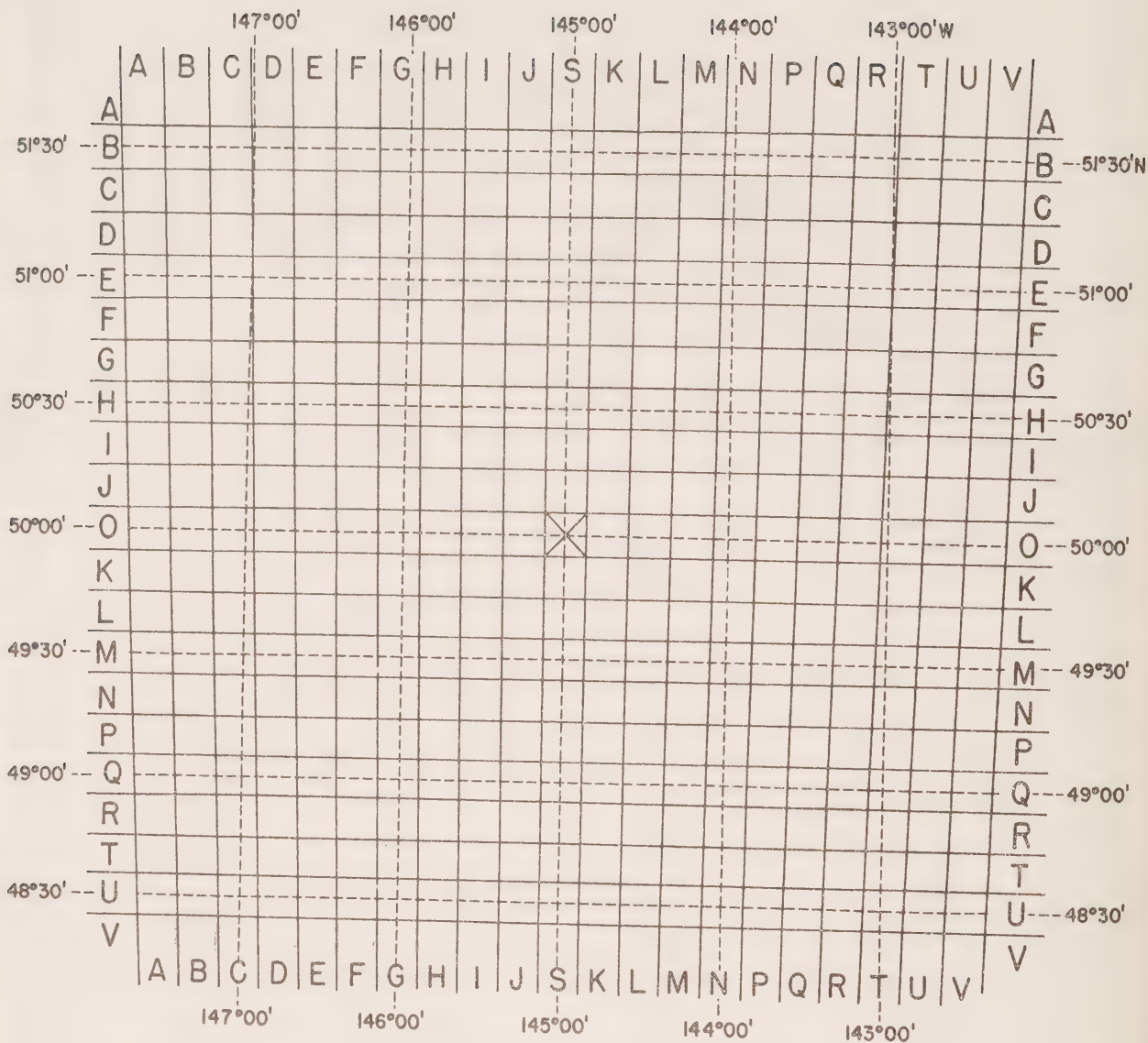


Figure 4.

Position-indicating grid for Ocean Weather Station "P", with mercator projection of a latitude and longitude grid superimposed.

INTRODUCTION

Canadian operation of Ocean Weather Station "P" (latitude 50°00'N, longitude 145°00'W) was inaugurated in December 1950. The Station is manned by two vessels of the Canadian naval frigate class operated by the Marine Services of the Department of Transport. They are the CCGS "St. Catharines" and the CCGS "Stonetown" (Fig. 1 and 2) (Atlantic Oceanographic Group, MS, 1961). Each ship remains on Station for a period of 6 weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch. The chief purpose of the Station is to operate as a meteorological station for surface and upper-air observations, and as an air-sea rescue station.

Bathythermograph observations have been made at Station "P" since July 1952. A program of more extensive oceanographic observations was commenced in August 1956. Since April 1959, a series of oceanographic stations has been frequently observed along the route between Station "P" and Swiftsure Bank (Fig. 3).

The CCGS "St. Catharines" is equipped with deck and laboratory facilities required to make bathythermograph and oceanographic observations. Oceanographers from the Pacific Oceanographic Group accompany the ship on each patrol. The CCGS "Stonetown" is equipped with bathythermograph equipment only. The BT observations on both ships are made by members of the ship's crew.

CRUISE LOG, CCGS "ST. CATHARINES", SURVEY P-65-5

- December 10: departed from Esquimalt, B. C. ; observed 8 oceanographic stations enroute to Station "P".
- December 13: arrived on Station "P" grid but oceanographic observations not commenced due to NW 40-knot winds and heavy seas.
- December 17: commenced series of oceanographic stations on 80-mile square, but cancelled after 2 stations due to heavy weather caused by NW 50-knot winds.
- December 27: regular oceanographic observations program delayed until now by strong NW winds which often reached 50-knot strength; plankton hauls and other productivity were also continued.
- January 17: observed 6 oceanographic stations on 80-mile square survey.
- January 23: relieved by CCGS "Stonetown", and proceeded on return trip to base; no stations observed enroute.
- January 27: berthed at Esquimalt, B. C.

OCEANOGRAPHIC STATION OBSERVATIONAL PROCEDURE

1. Samples at depths were obtained with Nansen reversing water sample bottles. Stations to 400 m depth were observed in one cast; stations to 2000 m were observed in two casts: 10 to 400 m, and 500 m to the deepest depth; stations to 4200 m were observed in 2 casts: 10 to 600 m, and 800 m to the deepest depth.
2. Seawater temperatures (except 0 m) were measured with protected reversing thermometers of German or Japanese manufacture. The arrangement of the thermometers on the water sample bottles was as follows: 10 to 125 m, 2 protected thermometers at each depth; 150 to 250m, 3 protected thermometers at each depth; 300 m to deepest bottle, 2 protected and one unprotected thermometer at each depth.
3. Surface samples (0 m) for salinity and dissolved oxygen determinations were obtained in a one-gallon plastic bucket. The surface temperature was measured in this sample with an armoured thermometer graduated in 0.5C° intervals.
4. Water transparency observations were made with a white secchi disc of 30 cm diameter.
5. Station locations were determined by the officers of the watch, who also made the meteorological observations reported with the oceanographic data.

A new series of oceanographic stations has been added to the regular observation program at Ocean Station "P". At the beginning and end of each patrol by CCGS "St. Catharines", a series of 8 stations to 1500 m depth are observed at 40 mile intervals along a survey track which is 80 miles square, and which is centered on the OS grid square. The stations are specially identified in the data record by the grid letter designator group in the STN entry of the master heading section. A 150 m vertical plankton haul is also made at each of these stations.

LABORATORY PROCEDURES

The salinity determinations of the oceanographic station samples and the surface samples collected during Survey P-65-5 were made with an inductive salinometer, Model 601 MK III, manufactured by Auto-Lab Industries Pty. Ltd., Sydney, Australia (Brown and Hamon, 1961). Most of the samples were analysed on board ship. The salinity data are the means of duplicate determinations whose "conductivity ratio" values fell within an acceptable range. The accuracy of the determinations at the 35 ‰ salinity level is stated to be ± 0.003 ‰ (Brown and Hamon, 1961). The surface samples collected during the "Stonetown" Patrol No. 68 were analysed in the shore laboratory using the MK III conductivity salinometer. These data are from duplicate determinations and have an accuracy range of ± 0.004 ‰ at the 95% probability level (Strickland, MS, 1958).

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Strickland and Parsons, 1965). The data are the means of duplicate determinations.

The sea temperature data presented in this report were obtained from reversing thermometer readings which were corrected by machine computations of the THERMOCHECK program. These computations were done by the Canadian Oceanographic Data Centre at Ottawa.

BATHYTHERMOGRAPH OBSERVATIONS

BT observations were made by both ships enroute to and from Station "P" at each 40' interval of longitude, whenever weather and operating schedule permitted. On Station, BT observations were made every 3 hours continuously throughout the patrol, except during intervals of rough weather.

The BT traces obtained during Survey P-65-5 and Patrol No. 68 were processed in the BT-aperture card format of the CODC (Sauer, 1964). The bathythermograms presented in Section IV of the data record were reproduced from these BT-aperture cards. The consecutive number entered below each bathythermogram refers to an entry in Table 1 which lists the information concerning time/date, position, and associated meteorological conditions.

For Patrol No. 68, when the BT observations were taken on main synoptic hours (00, 06, 12, 18) or intermediate synoptic hours (03, 09, 15, 21), the meteorological data have been transferred to the BT-aperture cards from the No. 9 Marine Data Cards, supplied by the Meteorological Branch of the Department of Transport, Toronto.

PERSONNEL

The oceanographer on board CCGS "St. Catharines" during Survey P-65-5 was Mr. K. Gantzer. The officers and men of both weatherships made the BT observations, and the crew of the "St. Catharines" gave excellent assistance during the oceanographic observations.

SECTION 11

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "estimate of precision" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a standard deviation (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The measurement error estimate of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "interpolation error estimate" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; first, to give an indication of the quality of the interpolated data; second, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "measurement error estimate" comprises the "combined measurement and interpolation error estimate". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

[illegible]

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $^{1/3} (V_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) WW-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

- (1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.
- (2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.
- (3) LATITUDE: Indicate the position of the platform at the time of observation.
- (4) LONGITUDE:
- (5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).
- (6) YEAR:
- (7) MONTH:
- (8) DAY:
- (9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.
- (10) COUNTRY/INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.
- (11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".
- (12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the predominant **non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_2
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01°C . Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 \text{ C1\%}$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^8$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

- (8) PO_4 Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
- (9) -P- Total Phosphorus reported to hundredths of microgram-atoms per litre.
- (10) NO_2 Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre – No dissolved nitrogen included –
- (11) NO_3 Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
- (12) SiO_2 Silicate-Silicon reported in whole microgram-atoms per litre.
- (13) pH The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

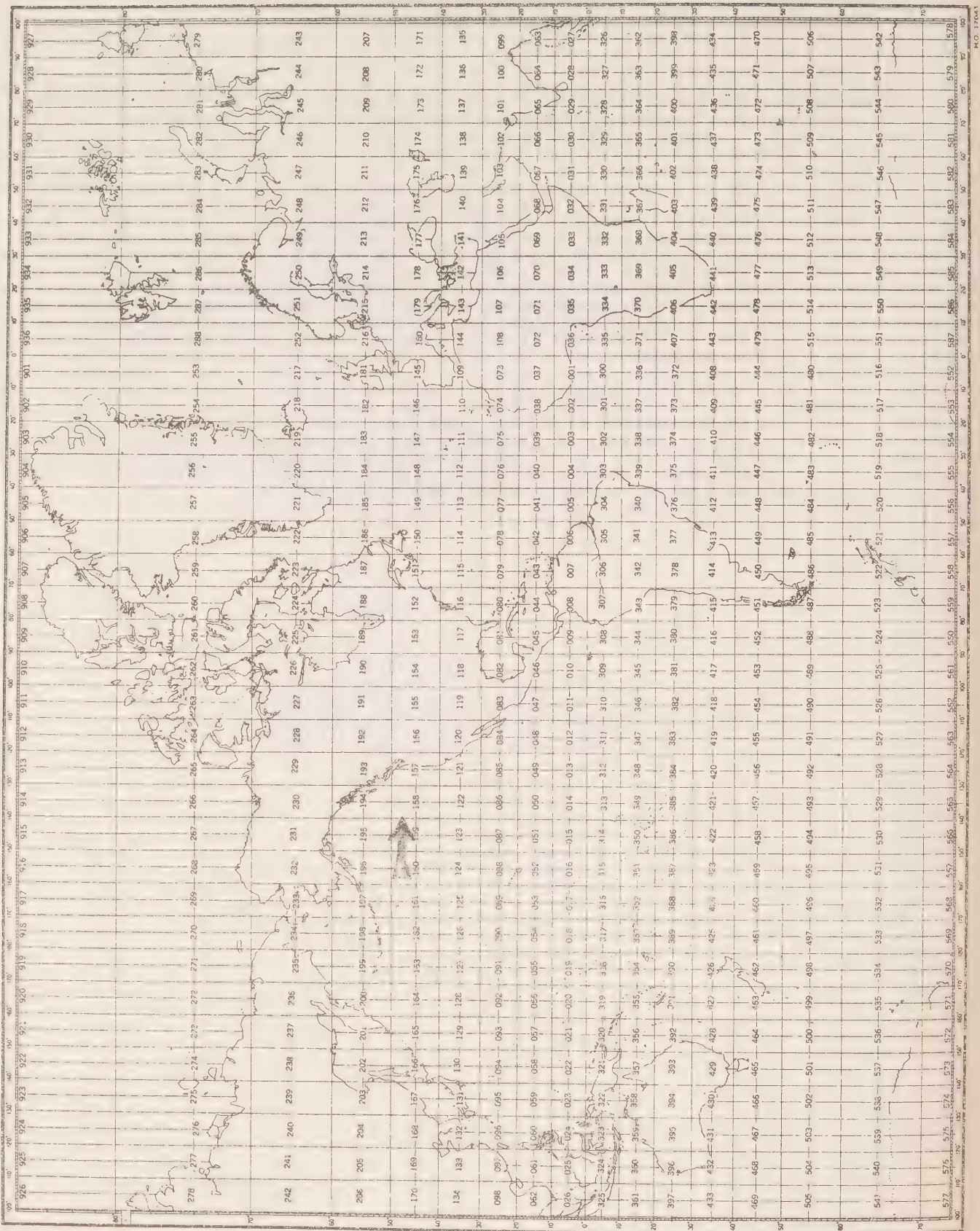
(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
 - (i) the interpolation error estimate is less than twice the standard deviation of measurement
 - the interpolated value is reported to three decimal places (e.g., 30.139).
 - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 - the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 - the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND
VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^p \delta dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL
ENERGY
ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = \frac{1}{g} \int_0^p \rho \delta dp = \int_0^z \rho p \delta dz$$
- χ is expressed in units of 10^6 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC
VOLUME
ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

- ‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs
- * (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.
- Q: appears occasionally in this data record, preceding an observed oxygen value. This "questionable" indicator infers that the value does not fit the usual pattern of oxygen distribution. "The questionable" value could be due to a sampling error and, generally, is not a result of an error in determination.



MARSDEN SQUARE CHART

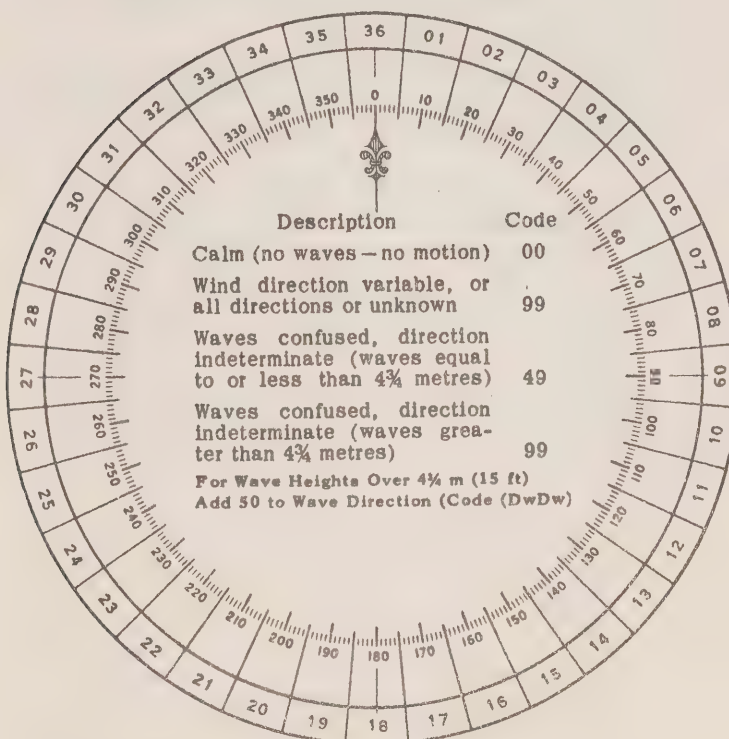
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)

(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)		4 7 m (22½ ft)
5	2½ m (8 ft)		5 7½ m (24 ft)
6	3 m (9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure			
ww			
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
	03	Clouds generally forming or developing	
Haze, dust, sand or smoke	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	} at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	

ww = 20 - 29	20	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	} not falling as shower(s)
	21	Drizzle (not freezing) or snow grains	
	22	Rain (not freezing)	
	23	Snow	
	24	Rain and snow or ice pellets, type (a)	
	25	Freezing drizzle or freezing rain	
	26	Shower(s) of rain	
	27	Shower(s) of snow, or of rain and snow	
	28	Shower(s) of hail, or of rain and hail	
	29	Fog or ice fog	
	29	Thunderstorm (with or without precipitation)	
ww = 30 - 39	30	Duststorm, sandstorm, drifting or blowing snow	
	31	Slight or moderate dust-storm or sand-storm	} -has decreased during the preceding hour -no appreciable change during the preceding hour -has begun or has increased during the preceding hour
	32		
	33	Severe dust-storm or sand-storm	} -has decreased during the preceding hour -no appreciable change during the preceding hour -has begun or has increased during the preceding hour
	34		
	35		
	36	Slight or moderate blowing snow	} generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	} generally high (above eye level)
	39	Heavy blowing snow	
ww = 40 - 49	40	Fog or ice fog at the time of observation	
	41	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	42	Fog or ice fog in patches	
	43	Fog or ice fog, sky visible	} has become thinner during the preceding hour
	44	Fog or ice fog, sky invisible	
	45	Fog or ice fog, sky visible	} no appreciable change during the preceding hour
	46	Fog or ice fog, sky invisible	
	47	Fog or ice fog, sky visible	} has begun or has become thicker during the preceding hour
	48	Fog or ice fog, sky invisible	
	49	Fog, depositing rime, sky visible	
	49	Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | |
|----|--|--|
| 50 | Drizzle, not freezing, intermittent | } slight at time of observation |
| 51 | Drizzle, not freezing, continuous | |
| 52 | Drizzle, not freezing, intermittent | } moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | |
| 54 | Drizzle, freezing, intermittent | } heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | |
| 56 | Drizzle, freezing, slight | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | |
| 58 | Drizzle and rain, slight | |
| 59 | Drizzle and rain, moderate or heavy | |

ww = 60 - 69 Rain

- | | | |
|----|---|-----------------------------------|
| 60 | Rain, not freezing, intermittent | } slight at time of observation |
| 61 | Rain, not freezing, continuous | |
| 62 | Rain, not freezing, intermittent | } moderate at time of observation |
| 63 | Rain, not freezing, continuous | |
| 64 | Rain, not freezing, intermittent | } heavy at time of observation |
| 65 | Rain, not freezing, continuous | |
| 66 | Rain, freezing, slight | |
| 67 | Rain, freezing, moderate or heavy | |
| 68 | Rain or drizzle and snow, slight | |
| 69 | Rain or drizzle and snow, moderate or heavy | |

70 - 79 Solid precipitation not in showers

ww

- | | | |
|----|---|-----------------------------------|
| 70 | Intermittent fall of snow flakes | } slight at time of observation |
| 71 | Continuous fall of snow flakes | |
| 72 | Intermittent fall of snow flakes | } moderate at time of observation |
| 73 | Continuous fall of snow flakes | |
| 74 | Intermittent fall of snow flakes | } heavy at time of observation |
| 75 | Continuous fall of snow flakes | |
| 76 | Ice prisms (with or without fog) | |
| 77 | Snow grains (with or without fog) | |
| 78 | Isolated starlike snow crystals (with or without fog) | |
| 79 | Ice pellets, type (a) | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | |
|----|--|---|
| 80 | Rain shower(s), slight | |
| 81 | Rain shower(s), moderate or heavy | |
| 82 | Rain shower(s), violent | |
| 83 | Shower(s) of rain and snow mixed, slight | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | |
| 85 | Snow shower(s), slight | |
| 86 | Snow shower(s), moderate or heavy | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain | } - slight |
| 88 | or rain and snow mixed | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | } - moderate or heavy |
| 90 | | |
| 91 | Slight rain at time of observation | } thunderstorm during the preceding hour but not at time of observation |
| 92 | Moderate or heavy rain at time of observation | |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation | } thunderstorm at time of observation |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | } thunderstorm at time of observation |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | |
| 99 | Thunderstorm, heavy, with hail at time of observation | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{4}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11CCO Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, St. Anne de Bellevue, P.Q.
05. Biological Station, St. John's Nfld.
06. Station de Biologie Marine, Grande Riviere, P.Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography.
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION 111

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Pacific Oceanographic Group, Nanaimo, B. C.
<u>Observation Platform:</u>	CCGS "St. Catharines"
<u>Vessel's cruising speed:</u>	13 knots
<u>Total number of stations occupied:</u>	23
<u>Anemometer height above sea level:</u>	19 metres
<u>Water transparency:</u>	Secchi Disc.
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Wet bulb temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)
<u>Depth to bottom:</u>	U. S. Coast and Geodetic Survey Chart 8500

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003
Oxygen	0.03

C-REF-NO 011	YR 1965	DEPTH 128	WAVES 1 1522	AIR T 09.4	VIS 7
CONS. NO 001	MONTH 12	MXSAMPD 01	WAVES 2 1622	WET B 08.3	STN 001
LAT 48-33 N	DAY 11	NO.DPTH 8	WND-DIR 160	WW-CODE 60	
LON 125-33 W	HR 00.6	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1016.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
006	0000	114 B	32253		2459	14919
006	0010	1149	32251		2457	14924
006	0020	1161	32299		2459	14930
006	0029	1179	32368		2461	14939
006	0049	1183	32390		2462	14944
006	0073	1175	32400		2464	14945
006	0098	1166	32416		2467	14946
006	0122	1162	32423		2468	14949

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1140 B	32253		2459	14919	0000	00000	3357
0010	1149	32251		2457	14924	0034	00002	3376
0020	1161	32299		2459	14930	0068	00007	3364
0030	1180	32371		2461	14940	0101	00016	3346
0050	1183	32391		2462	14944	0169	00043	3341
0075	1174	32401		2464	14945	0252	00097	3323
0100	1166	32414		2467	14947	0336	00171	3305

C-REF-NO 011	YR 1965	DEPTH 109	WAVES 1 1422	AIR T 09.9	VIS 6
CONS. NO 002	MONTH 12	MXSAMPD 01	WAVES 2 1622	WET B 09.4	STN 002
LAT 48-38 N	DAY 11	NO.DPTH 7	WND-DIR 130	WW-CODE 63	
LON 126-00 W	HR 02.6	W-COLOR	WND-SPD 15	CLD-TPE X	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1014.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
026	0000	114 B	32272		2460	14919
026	0010	1163	32331		2461	14930
026	0020	1165	32332		2461	14932
026	0030	1164	32332		2461	14933
026	0050	1161	32332		2461	14936
026	0075	1172	32457		2469	14945
026	0100	1160 B	32575		2480	14947

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140 B	32272		2460	14919	0000	00000	3343
0010	1163	32331		2461	14930	0034	00002	3342
0020	1165	32332		2461	14932	0067	00007	3347
0030	1164	32332		2461	14933	0101	00016	3347
0050	1161	32332		2461	14936	0168	00043	3346
0075	1172	32457		2469	14945	0251	00096	3279
0100	1160 B	32575		2480	14947	0333	00169	3176

C-REF-NO 011	YR 1965	DEPTH C 1300	WAVES 1 1423	AIR T 09.9	VIS 5
CONS. NO 003	MONTH 12	MXSAMPD 01	WAVES 2 4933	WET B 09.9	STN 003
LAT 48-42 N	DAY 11	NO.DPTH 7	WND-DIR 140	WW-CODE 63	
LON 126-40 W	HR 05.2	W-COLOR	WND-SPD 12	CLD-TPE 7	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1013.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
052	0000	104 B	32179		2471	14882
052	0009	1063	32211		2469	14893
052	0018	1065	32211		2469	14895
052	0027	1066	32212		2469	14897
052	0044	1062	32215		2470	14898
052	0067	0835 F	32497		2528	14821
052	0089	0743	32847		2569	14794

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	32179		2471	14882	0000	00000	3246
0010	1064	32212		2469	14893	0033	00002	3262
0020	1065	32211		2469	14895	0066	00007	3267
0030	1071 B	3221 B		2468	14899	0098	00015	3281
0050	1009 G	3227 C		2483	14880	0163	00041	3138
0075	0844 I	3258 F		2533	14827	0236	00087	2662

C-REF-NO 011 YR 1965 DEPTH C 3275 WAVES 1 2822 AIR T 09.4 VIS 6
 CONS. NO 004 MONTH 12 MXSAMPD 04 WAVES 2 2822 WET B 08.3 STN 007
 LAT 49-10 N DAY 12 NO.DPTH 14 WND-DIR 280 WW-CODE 02
 LON 132-40 W HR 03.2 W-COLOR WND-SPD 06 CLD-TPE X
 MARSD SQ 158 C/I 1802 W-TRNSP BARO 1027.0 CLD-AMT 7 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
032	0000	092 B	32602		2523	14844
032	0010	0922	32529		2517	14845
032	0020	0926	32529		2517	14848
032	0030	0925	32545		2518	14850
032	0050	0925	32537		2517	14853
032	0075	0825 F	32667		2543	14821
032	0100	0659	32761		2573	14761
032	0125	0617	32898		2589	14750
032	0150	0627	33200		2612	14762
032	0175	0614	33454		2634	14765
032	0200	0568	33689		2658	14753
032	0250	0507	33799		2674	14738
032	0300	0492	33836		2678	14741
032	0400	0446 B	33946		2692	14739

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0920 B	32602		2523	14844	0000	00000	2745
0010	0922	32529		2517	14845	0028	00001	2804
0020	0926	32529		2517	14848	0056	00006	2812
0030	0925	32545		2518	14850	0084	00013	2800
0050	0925	32537		2517	14853	0141	00036	2810
0075	0825 F	32667		2543	14821	0208	00079	2570
0100	0659	32761		2573	14761	0270	00133	2282
0125	0617	32898		2589	14750	0325	00197	2131
0150	0627	33200		2612	14762	0376	00269	1921
0175	0614	33454		2634	14765	0422	00345	1718
0200	0568	33689		2658	14753	0462	00422	1490
0225	0532	3378 F		2669	14744	0499	00501	1384
0250	0507	33799		2674	14738	0533	00585	1342
0300	0492	33836		2678	14741	0600	00773	1303
0400	0446 B	33946		2692	14739	0725	01220	1179

C-REF-NO 011	YR 1965	DEPTH C 3549	WAVES 1 2421	AIR T 08.3	VIS 5
CONS. NO 005	MONTH 12	MXSAMPD 01	WAVES 2 2724	WET B 08.3	STN 008
LAT 49-17 N	DAY 12	NO.DPTH 8	WND-DIR 240	WW-CODE 20	
LON 134-40 W	HR 10.8	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1025.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	090 B	32492		2518	14835
108	0010	0897	32481		2517	14835
108	0020	0898	32482		2517	14837
108	0030	0896	32490		2518	14838
108	0049	0895	32481		2518	14841
108	0074	0889	32508		2521	14843
108	0099	0609	32806		2583	14742
108	0123	0590	33198		2616	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0900 B	32492		2518	14835	0000	00000	2797
0010	0897	32481		2517	14835	0028	00001	2802
0020	0898	32482		2517	14837	0056	00006	2805
0030	0896	32490		2518	14838	0085	00013	2798
0050	0897	32479		2517	14842	0141	00036	2811
0075	0878 B	32516		2523	14839	0211	00081	2759
0100	0692 I	3279 F		2572	14775	0275	00137	2299
0125	0581 D	33241		2621	14740	0327	00197	1831

C-REF-NO 011	YR 1965	DEPTH C 3774	WAVES 1 292X	AIR T 08.3	VIS 7
CONS. NO 006	MONTH 12	MXSAMPD 04	WAVES 2 2944	WET B 07.2	STN 009
LAT 49-26 N	DAY 12	NO.DPTH 14	WND-DIR 300	WW-CODE 03	
LON 136-40 W	HR 18.2	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1025.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
182	0000	084 B	32427		2522	14811
182	0010	0841	32402		2520	14813
182	0020	0844	32397		2519	14816
182	0030	0842	32401		2520	14816
182	0050	0833	32410		2522	14816
182	0075	0833 B	32413		2522	14821
182	0100	0601	32708		2576	14737
182	0125	0552	32939		2601	14725
182	0150	0540	33328		2633	14729
182	0175	0486	33598		2660	14714
182	0200	0463	33704		2671	14710
182	0250	0433	33787		2681	14707
182	0300	0408	33839		2688	14706
182	0400	0389	33967		2700	14716

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	0840 B	32427		2522	14811	0000	00000	2758
0010	0841	32402		2520	14813	0028	00001	2780
0020	0844	32397		2519	14816	0056	00006	2789
0030	0842	32401		2520	14816	0084	00013	2785
0050	0833	32410		2522	14816	0140	00036	2769
0075	0833 B	32413		2522	14820	0209	00080	2771
0100	0601	32708		2576	14737	0273	00136	2251
0125	0552	32939		2601	14724	0326	00198	2023
0150	0540	33328		2633	14729	0374	00264	1721
0175	0486	33598		2660	14714	0414	00330	1461
0200	0463	33704		2671	14710	0449	00399	1359
0225	0446	3376 B		2677	14708	0483	00472	1303
0250	0433	33787		2681	14707	0515	00551	1270
0300	0408	33839		2688	14706	0578	00727	1209
0400	0389	33967		2700	14716	0694	01143	1101

C-REF-NO 011	YR 1965	DEPTH C 3889	WAVES 1 2721	AIR T 07.2	VIS 7
CONS. NO 007	MONTH 12	MXSAMPD 04	WAVES 2 2735	WET B 05.5	STN 010
LAT 49-34 N	DAY 13	NO.DPTH 14	WND-DIR 270	WW-CODE 02	
LON 138-40 W	HR 01.9	W-COLOR	WND-SPD 03	CLD-TPE 2	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1029.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
019	0000	084 B	32601		2536	14813
019	0010	0840	32490		2527	14814
019	0020	0843	32491		2526	14816
019	0030	0841	32492		2527	14817
019	0050	0841	32494		2527	14821
019	0075	0840	32503		2528	14824
019	0100	0574	32740		2582	14727
019	0125	0518	32875		2599	14710
019	0150	0522	33248		2629	14720
019	0175	0506	33538		2653	14722
019	0200	0475	33688		2669	14715
019	0250	0418	33732		2678	14700
019	0300	0375	33775		2686	14691
019	0400	0377	33933		2698	14710

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0840 B	32601		2536	14813	0000	00000	2629
0010	0840	32490		2527	14814	0027	00001	2713
0020	0843	32491		2526	14816	0054	00006	2718
0030	0841	32492		2527	14817	0082	00013	2716
0050	0841	32494		2527	14821	0136	00035	2718
0075	0840	32503		2528	14824	0204	00079	2714
0100	0574	32740		2582	14727	0266	00133	2195
0125	0518	32875		2599	14710	0319	00195	2033
0150	0522	33248		2629	14720	0367	00261	1761
0175	0506	33538		2653	14722	0409	00330	1528
0200	0475	33688		2669	14715	0445	00401	1384
0225	0445	3373 E		2675	14707	0479	00475	1322
0250	0418	33732		2678	14700	0512	00555	1295
0300	0375	33775		2686	14691	0576	00734	1223
0400	0377	33933		2698	14710	0694	01155	1114

C-REF-NO 011	YR 1965	DEPTH C 3880	WAVES 1 2522	AIR T 08.3	VIS 7
CONS. NO 008	MONTH 12	MXSAMPD 04	WAVES 2 2734	WET B 07.7	STN 011
LAT 49-41 N	DAY 13	NO.DPTH 14	WND-DIR 250	WW-CODE 02	
LON 140-40 W	HR 09.2	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1027.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
092	0000	074 B	32588		2549	14775
092	0010	0727	32587		2551	14771
092	0020	0729	32573		2549	14773
092	0030	0727	32572		2549	14774
092	0050	0727	32569		2549	14777
092	0075	0727 B	32571		2549	14782
092	0099	0569	32746		2583	14725
092	0124	0499	32850		2600	14701
092	0149	0499	33228		2630	14711
092	0174	0476	33556		2658	14710
092	0199	0448	33684		2671	14704
092	0249	0397	33743		2681	14691
092	0298	0375	33825		2690	14691
092	0398	0370	33972		2702	14708

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0740 B	32588		2549	14775	0000	00000	2502
0010	0727	32587		2551	14771	0025	00001	2487
0020	0729	32573		2549	14773	0050	00005	2501
0030	0727	32572		2549	14774	0075	00012	2501
0050	0727	32569		2549	14777	0126	00032	2506
0075	0727 B	32571		2549	14782	0189	00073	2508
0100	0565	32748		2584	14723	0248	00125	2178
0125	0499	32863		2601	14702	0301	00186	2021
0150	0498	33244		2631	14711	0348	00252	1738
0175	0475	33564		2659	14709	0388	00319	1475
0200	0447	33686		2672	14703	0424	00388	1355
0225	0419	3373 D		2678	14697	0457	00460	1296
0250	0396	33745		2681	14691	0490	00539	1263
0300	0370 B	3382 B		2690	14690	0551	00713	1184
0400	0371	33975		2702	14708	0665	01120	1076

C-REF-NO 011	YR 1965	DEPTH C 4114	WAVES 1 00X0	AIR T 07.2	VIS 3
CONS. NO 009	MONTH 12	MXSAMPD 15	WAVES 2 2723	WET B 07.2	STN ON
LAT 50-00 N	DAY 17	NO.DPTH 20	WND-DIR CALM	WW-CODE 41	
LON 143-54 W	HR 01.0	W-COLOR 00	WND-SPD 00	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP 15	BARO 1006.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
010	0000	071 B	32575		2552	14763
010	0010	0691	32570		2554	14757
010	0020	0693	32573		2554	14759
010	0030	0692	32573		2554	14760
010	0050	0691	32575		2555	14763
010	0075	0692 B	32575		2554	14768
010	0100	0567	32783		2587	14724
010	0125	0511	33040		2613	14709
010	0150	0487	33337		2639	14707
010	0175	0457	33601		2664	14702
010	0200	0415	33699		2676	14690
010	0250	0381	33766		2685	14685
010	0300	0364	33837		2692	14687
010	0400	0366	33990		2704	14706
015	0500	0370	34109		2713	14726
015	0600	0351	34192		2721	14736
015	0800	0324	34309		2733	14759
015	1000	0292	34383		2742	14780
015	1200	0263	34444		2750	14802
015	1500	0229	34513		2758	14838

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0710 B	32575		2552	14763	0000	00000	2472
0010	0691	32570		2554	14757	0025	00001	2453
0020	0693	32573		2554	14759	0049	00005	2455
0030	0692	32573		2554	14760	0074	00011	2455
0050	0691	32575		2555	14763	0124	00032	2455
0075	0692 B	32575		2554	14768	0185	00071	2459
0100	0567	32783		2587	14724	0243	00123	2155
0125	0511	33040		2613	14709	0295	00181	1902
0150	0487	33337		2639	14707	0339	00244	1655
0175	0457	33601		2664	14702	0378	00309	1427
0200	0415	33699		2676	14690	0413	00375	1312
0225	0393	3374 C		2682	14686	0445	00445	1259
0250	0381	33766		2685	14685	0476	00522	1232
0300	0364	33837		2692	14687	0537	00692	1165
0400	0366	33990		2704	14706	0649	01093	1060
0500	0370	34109		2713	14726	0752	01568	0983

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0351	34192		2721	14736	0848	02107	0909
0700	0337	34257		2728	14747	0937	02700	0853
0800	0324	34309		2733	14759	1021	03347	0807
1000	0292	34383		2742	14780	1177	04781	0731
1200	0263	34444		2750	14802	1318	06377	0666
1500	0229	34513		2758	14838	1510	09022	0592

C-REF-NO 011	YR 1965	DEPTH C 3968	WAVES 1 2722	AIR T 07.2	VIS 6
CONS. NO 010	MONTH 12	MXSAMPD 15	WAVES 2 2732	WET B 06.6	STN GN
LAT 50-42 N	DAY 17	NO.DPTH 16	WND-DIR 270	WW-CODE 02	
LON 143-52 W	HR 08.7	W-COLOR	WND-SPD 02	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP	BARO 1003.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
087	0000	067 B	32513		2552	14746
087	0010	0670	32588		2558	14749
087	0020	0672	32582		2558	14751
087	0029	0670	32583		2558	14752
087	0049	0670	32587		2558	14755
087	0074	0671	32585		2558	14759
087	0098	0542	32772		2589	14714
087	0123	0501	32906		2604	14703
087	0147	0458	33204		2632	14693
087	0172	0400	33480		2660	14676
092	0477	0356	34080		2712	14716
092	0577	0345	34188		2722	14729
092	0778	0317	34335		2736	14753
092	0972	0289	34401		2744	14774
092	1170	0263	34446		2750	14797
092	1466	0232	34518		2758	14834

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0670 B	32513		2552	14746	0000	00000	2468
0010	0670	32588		2558	14749	0025	00001	2413
0020	0672	32582		2558	14751	0049	00005	2422
0030	0670	32583		2558	14752	0073	00011	2419
0050	0671	32585		2558	14756	0122	00031	2422
0075	0666	32592		2559	14758	0183	00070	2414
0100	0537	32781		2590	14712	0240	00121	2122
0125	0498	32928		2606	14702	0291	00180	1971
0150	0451	33239		2636	14691	0338	00245	1690
0175	0404 C	33511		2662	14679	0377	00310	1440
0200	0367 E	3375 B		2685	14671	0411	00374	1227
*0225	0336 F	3395 B		2704	14664	0439	00437	1046
*0250	0311 G	3412 C		2720	14660	0464	00496	0897
*0300	0278 G	3436 C		2741	14657	0504	00608	0694
*0400	0285 E	3441 B		2745	14678	0572	00854	0664
0500	0353	34108		2715	14719	0655	01243	0967
0600	0342	34209		2724	14732	0748	01770	0887
0700	0328	34288		2731	14744	0835	02345	0821
0800	0314	34345		2737	14755	0915	02964	0770
1000	0285	34408		2745	14777	1064	04340	0705

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
1200	0260	34459		2751	14801	1202	05891	0651

C-REF-NO 011	YR 1965	DEPTH C 4220	WAVES 1 3622	AIR T 04.9	VIS 6
CONS. NO 011	MONTH 12	MXSAMPD 04	WAVES 2 3433	WET B 04.4	STN 501
LAT 49-55 N	DAY 27	NO.DPTH 14	WND-DIR 360	WW-CODE 88	
LON 145-06 W	HR 19.0	W-COLOR	WND-SPD 10	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1016.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	062 B	32622	689	2567	14727
190	0010	0627	32621	699	2566	14732
190	0019	0629	32621	698	2566	14734
190	0029	0628	32619	699	2566	14735
190	0048	0627	32619	700	2566	14738
190	0072	0626	32632	694	2567	14742
190	0097	0628	32626	692	2567	14747
190	0121	0502	32897	654	2603	14703
190	0145	0447	33222	550 B	2635	14688
190	0169	0389	33560	458 B	2668	14672
190	0193	0362	33659	376	2678	14666
190	0242	0351	33745	290	2686	14671
190	0290	0357	33913	205	2699	14683
190	0389	0355	33987	141	2705	14700

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620 B	32622	689	2567	14727	0000	00000	2326
0010	0627	32621	699	2566	14732	0023	00001	2336
0020	0629	32621	698	2566	14734	0047	00005	2340
0030	0628	32619	699	2566	14735	0071	00011	2341
0050	0627	32620	700	2566	14738	0118	00030	2341
0075	0630 B	3262 B	695	2566	14744	0177	00068	2345
0100	0614 B	3265 B	690	2570	14742	0235	00121	2308
0125	0490	32949	639	2608	14699	0289	00182	1947
0150	0434	3330 B	530 B	2642	14685	0334	00245	1625
0175	0380	3360 B	436 B	2671	14670	0371	00307	1351
0200	0358	3367 B	360	2680	14666	0404	00370	1275
0225	0350	3372 C	314 B	2684	14667	0436	00439	1235
0250	0352	3377 B	275	2688	14673	0467	00514	1197
0300	0351 B	3389 I	203 B	2697	14682	0525	00678	1116

C-REF-NO 011	YR 1966	DEPTH C 4220	WAVES 1 0422	AIR T 01.1	VIS 7
CONS. NO 012	MONTH 1	MXSAMPD 38	WAVES 2 0234	WET B -01.1	STN 502
LAT 49-55 N	DAY 03	NO.DPTH 25	WND-DIR 040	WW-CODE 02	
LON 145-02 W	HR 19.0	W-COLOR 10	WND-SPD 05	CLD-TPE 5	
MARSD SQ 159	C/I 1802	W-TRNSP 15	BARO 1008.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	055 B	32665	709	2579	14700
190	0010	0591	32659	709	2574	14718
190	0019	0595	32663	708	2574	14721
190	0029	0594	32660	711	2574	14722
190	0049	0592	32674	709	2575	14725
190	0073	0592	32716	711	2578	14729
190	0097	0592	32715	710	2578	14733
190	0122	0520	33045	642	2613	14712
190	0146	0442	33307	564	2642	14687
190	0170	0386	33609	453	2672	14672
190	0195	0360	33650	391	2678	14665
190	0243	0343	33722	309	2685	14667
190	0292	0354	33818	245	2691	14681
190	0389	0354	33981	143	2704	14699
190	0487	0355	34145	088	2717	14718
190	0586	0345	34199	079	2723	14731
202	0753	0323	34289	064	2732	14751
202	0946	0300	34376	064	2741	14774
202	1138	0270	34444	073	2749	14794
202	1428	0238	34521	081	2758	14830
202	1907	0200	34601	129	2767	14896
202	2390	0178	34632	192	2772	14969
202	2871	0163	34660	255	2775	15046
202	3356	0154 B	34683	304	2777	15127
202	3834	0151	34698	331	2779	15210

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0550 B	32665	709	2579	14700	0000	00000	2213
0010	0591	32659	709	2574	14718	0023	00001	2265
0020	0595	32663	708	2574	14721	0045	00005	2268
0030	0594	32660	711	2574	14722	0068	00011	2270
0050	0592	32676	709	2575	14725	0114	00029	2258
0075	0593	3271 B	712	2578	14730	0170	00065	2237
0100	0586	3275 B	704	2581	14732	0226	00116	2203
0125	0510	33078	633	2616	14709	0277	00174	1872
0150	0431	3337 B	545	2648	14684	0321	00235	1575
0175	0379	3363 C	438	2674	14670	0357	00296	1327
0200	0357	33657	381	2678	14665	0390	00359	1286

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0225	0345	33694	336	2682	14665	0422	00429	1249
0250	0344	33735	299	2686	14669	0453	00504	1218
0300	0355	33832	235	2693	14683	0513	00673	1159
0400	0354	34002	134	2706	14702	0624	01069	1039
0500	0354	34155	085	2718	14720	0724	01526	0932
0600	0343	34207	077	2723	14733	0816	02046	0890
0700	0330	34261	068	2729	14745	0903	02630	0843
0800	0318	34312	063	2734	14756	0986	03269	0798
1000	0292	34397	066	2743	14780	1140	04684	0720
1200	0262	34463	074	2751	14802	1279	06251	0651
1500	0231	34536	086	2760	14840	1466	08834	0578
2000	0195	34609	141	2768	14910	1741	13745	0504
2500	0174	34639	207	2772	14987	1990	19513	0474
3000	0160	34667	270	2776	15067	2226	26216	0452
3500	0152	34688	313	2778	15152	2454	33880	0440

C-REF-NO 011 YR 1966 DEPTH C 4220 WAVES 1 1622 AIR T 04.4 VIS 7
 CONS. NO 013 MONTH 1 MXSAMPD 04 WAVES 2 1233 WET B 02.2 STN 503
 LAT 50-04 N DAY 06 NO.DPTH 15 WND-DIR 160 WW-CODE 02
 LON 145-06 W HR 19.1 W-COLOR 40 WND-SPD 04 CLD-TPE 4
 MARSD SQ 195 C/I 1802 W-TRNSP 16 BARO 1011.0 CLD-AMT 7 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	057 B	32750	700 B	2584	14709
191	0003	0585	32685	700	2577	14715
191	0010	0588	32719	701	2579	14717
191	0020	0586	32670	704	2575	14718
191	0030	0584	32681	706	2576	14719
191	0049	0584	32688	706	2577	14722
191	0074	0586	32682	704	2576	14727
191	0099	0587	32720	703	2579	14732
191	0124	0586	32689	702	2577	14735
191	0149	0504	33170	608	2624	14712
191	0173	0425	33432	527	2654	14686
191	0198	0379	33604	438	2672	14673
191	0248	0347	33701	321	2683	14669
191	0297	0349	33813	231	2692	14680
191	0394	0357	33988	134	2705	14702

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	32750	700 B	2584	14709	0000	00000	2172
0010	0588	32719	701	2579	14717	0022	00001	2217
0020	0586	32670	704	2575	14718	0045	00005	2252
0030	0584	32681	706	2576	14719	0067	00010	2243
0050	0584	32688	706	2577	14722	0112	00029	2240
0075	0586	32684	704	2576	14727	0169	00065	2248
0100	0588	3272 B	704	2579	14732	0225	00116	2230
0125	0584	3271 B	699	2578	14734	0281	00181	2235
0150	0500	33184	605	2626	14711	0332	00251	1785
0175	0420	33449	520	2656	14685	0373	00320	1503
0200	0377	33611	432	2673	14673	0409	00389	1340
0225	0355	3368 E	368	2680	14668	0442	00460	1272
0250	0347	33706	317	2683	14670	0474	00537	1243
0300	0341 C	3381 B	227	2692	14677	0534	00708	1162
0400	0360	33999	131	2705	14704	0646	01106	1047

C-REF-NO 011	YR 1966	DEPTH C 4220	WAVES 1 1233	AIR T 03.8	VIS 7
CONS. NO 014	MONTH 1	MXSAMPD 20	WAVES 2 1234	WET B 03.3	STN 504
LAT 50-01 N	DAY 08	NO.DPTH 22	WND-DIR 120	WW-CODE 61	
LON 145-14 W	HR 18.6	W-COLOR	WND-SPD 11	CLD-TPE 7	
MARSD SQ 195	C/I 1802	W-TRNSP	BARO 1005.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
186	0000	054 B	32739	709 B	2586	14696
186	0003	0577	32745	707	2582	14712
186	0009	0580	32666	709	2576	14713
186	0019	0579	32673	709	2576	14715
186	0028	0578	32700	707	2579	14716
186	0047	0578	32674	712	2577	14719
186	0070	0579	32670	714	2576	14723
186	0093	0579	32714	706	2580	14727
186	0117	0520	32863	664	2598	14709
186	0140	0475	33174	605	2628	14698
186	0164	0419	33470	500	2657	14683
186	0187	0374	33635	421	2675	14670
186	0234	0344	33704	325	2683	14666
186	0282	0339	33798	254	2691	14673
186	0379	0357	33955	143	2702	14699
194	0479	0353	34066	120	2711	14715
194	0576	0350	34161	090	2719	14731
194	0771	0326	34293	Q134	2732	14755
194	0968	0294	34387	065	2742	14775
194	1166	0265	34453	070	2750	14797
194	1468	0234 B	34516	079	2758	14835
194	1972	0195	34599	143	2768	14905

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0540 B	32739	709 B	2586	14696	0000	00000	2147
0010	0580	32662	709	2575	14713	0022	00001	2250
0020	0579	32676	709	2577	14715	0045	00005	2240
0030	0578	32699	707	2579	14716	0067	00010	2222
0050	0578	32671	713	2576	14719	0112	00029	2246
0075	0581	32673	714	2576	14725	0169	00065	2251
0100	0564 B	32743	697	2584	14723	0224	00115	2182
0125	0504	3296 C	647	2608	14705	0277	00175	1951
0150	0452	3331 B	563	2641	14692	0322	00238	1640
0175	0396	33562	460	2667	14676	0360	00301	1394
0200	0360	3367 D	389	2679	14667	0394	00366	1279
0225	0346	3370 C	339	2683	14665	0425	00435	1242
0250	0340	33735	299	2686	14667	0456	00511	1215
0300	0342	33831	228	2694	14677	0516	00679	1148

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0400	0357	33981	135	2704	14703	0627	01077	1058
0500	0353	34088	112	2713	14719	0730	01551	0981
0600	0348	34180	095 B	2721	14734	0826	02090	0914
0700	0337	34252	116 C	2728	14747	0915	02687	0856
0800	0321	34309	125 B	2734	14758	0999	03333	0805
1000	0289	34399	063	2744	14779	1153	04749	0716
1200	0261	34461	070	2751	14801	1292	06310	0651
1500	0229 B	3453 B	086	2759	14839	1479	08897	0580
2000	0194	34601	148	2768	14909	1755	13837	0508

C-REF-NO 011	YR 1966	DEPTH C 4220	WAVES 1 1523	AIR T 06.6	VIS 4
CONS. NO 015	MONTH 1	MXSAMPD 04	WAVES 2 2744	WET B 06.1	STN 505
LAT 50-02 N	DAY 10	NO.DPTH 15	WND-DIR 150	WW-CODE 63	
LON 144-58 W	HR 19.6	W-COLOR	WND-SPD 06	CLD-TPE 7	
MARSD SQ 195	C/I 1802	W-TRNSP	BARO 1005.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	057 B	32655	700	2576	14708
196	0003	0569				
196	0010	0571	32658	700	2576	14710
196	0019	0570	32658	698	2576	14711
196	0029	0570	32660	700	2576	14712
196	0048	0576	32669	698	2576	14718
196	0072	0572	32667	698	2577	14720
196	0096	0572	32662	698	2576	14724
196	0120	0520	33025	631	2611	14712
196	0144	0472	33266	574	2636	14699
196	0168	0399	33508	482	2662	14676
196	0192	0367	33639	396	2676	14668
196	0240	0342	33743	285	2687	14666
196	0287	0352	33832		2693	14680
196	0386	0359	33976	140	2704	14701

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	32655	700	2576	14708	0000	00000	2243
0010	0571	32658	700	2576	14710	0023	00001	2243
0020	0570	32658	698	2576	14711	0045	00005	2243
0030	0570	32661	700	2576	14713	0068	00010	2243
0050	0576	32669	698	2576	14718	0113	00029	2245
0075	0573	3266 B	700	2576	14721	0169	00065	2254
0100	0565	3271 D	689	2581	14723	0226	00116	2204
0125	0511	33080	620	2617	14709	0277	00174	1871
0150	0453	33332	552	2643	14693	0321	00236	1623
0175	0387	33555	456	2667	14672	0359	00299	1390
0200	0360	3366 B	374	2679	14666	0393	00364	1284
0225	0345	3372 C	314	2685	14665	0424	00432	1227
0250	0343	33763	251 C	2688	14669	0455	00507	1197
0300	0342 C	33854	171 C	2695	14678	0513	00672	1131
0400			148 B					

C-REF-NO 011	YR 1966	DEPTH C 4220	WAVES 1 1722	AIR T 06.6	VIS 7
CONS. NO 016	MONTH 1	MXSAMPD 20	WAVES 2 2034	WET B 05.5	STN 506
LAT 50-03 N	DAY 13	NO.DPTH 21	WND-DIR 170	WW-CODE 02	
LON 144-57 W	HR 19.0	W-COLOR 40	WND-SPD 03	CLD-TPE 3	
MARSD SQ 195	C/I 1802	W-TRNSP 15	BARO 998.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	059 B	32685	693	2576	14716
190	0010	0578	32659	694	2575	14713
190	0020	0580	32657	694	2575	14715
190	0030	0579	32659	692	2575	14716
190	0050	0578	32659	695	2575	14719
190	0074	0578	32657	695	2575	14723
190	0099	0577	32668	696	2576	14727
190	0124	0513	33208	606	2626	14712
190	0149	0430	33385	522	2649	14684
190	0174	0381	33580	433	2670	14670
190	0199	0356	33664	366	2679	14665
190	0248	0350	33763	265	2687	14671
190	0298	0359	33849	199	2693	14685
190	0397	0354	33983	123	2705	14701
198	0492	0359	34108	094	2714	14720
198	0591	0346	34201	087	2723	14732
198	0788	0325	34317	068	2734	14758
198	0984	0291	34395	Q073	2743	14777
198	1181	0265	34447	059	2750	14799
198	1477	0233	34515	074	2758	14836
198	1970	0198	34587	146	2766	14906

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0590 B	32685	693	2576	14716	0000	00000	2244
0010	0578	32659	694	2575	14713	0023	00001	2250
0020	0580	32657	694	2575	14715	0045	00005	2255
0030	0579	32659	692	2575	14716	0068	00010	2254
0050	0578	32659	695	2575	14719	0113	00029	2255
0075	0579	32652	696	2575	14723	0170	00066	2263
0100	0575	3269 B	693	2578	14727	0227	00116	2235
0125	0510	33218	603	2628	14711	0277	00174	1766
0150	0427	33394	518	2650	14683	0319	00232	1550
0175	0380	33585	430	2670	14670	0356	00293	1361
0200	0356	33667	364	2679	14665	0389	00357	1278
0225	0348	33723	308	2684	14666	0420	00426	1230
0250	0350	33767	262	2688	14672	0451	00501	1201
0300	0359	33852	197	2694	14685	0510	00668	1149
0400	0354	33987	122	2705	14701	0621	01064	1050

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0358	34117	093	2715	14721	0723	01532	0965
0600	0345	34208	086	2723	14734	0817	02061	0891
0700	0335	34273	075	2729	14747	0904	02644	0839
0800	0323	34323	068	2735	14759	0987	03280	0796
1000	0289	34400	072	2744	14779	1140	04688	0715
1200	0263	34452	059	2750	14802	1279	06260	0660
1500	0231	34518	071	2758	14839	1469	08890	0591
2000	0197	34590	153	2767	14910	1752	13936	0520

C-REF-NO 011	YR 1966	DEPTH C 4261	WAVES 1 3023	AIR T 04.9	VIS 7
CONS. NO 017	MONTH 1	MXSAMPD 15	WAVES 2 3023	WET B 03.3	STN NN
LAT 49-18 N	DAY 17	NO.DPTH 20	WND-DIR 300	WW-CODE 02	
LON 143-55 W	HR 02.5	W-COLOR	WND-SPD 13	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1028.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
025	0000	056 B	32667		2578	14704
025	0010	0568	32644		2575	14708
025	0019	0571	32661		2576	14711
025	0029	0569	32690		2579	14712
025	0049	0569	32660		2577	14715
025	0073	0568	32663		2577	14719
025	0097	0569	32690		2579	14724
025	0122	0562	32723		2582	14725
025	0146	0490	33355		2641	14708
025	0170	0473	33588		2661	14708
025	0195	0446	33693		2672	14702
025	0243	0407	33741		2680	14695
025	0292	0379	33828		2690	14692
025	0389	0366	33951		2701	14704
030	0486	0369	34074		2710	14723
030	0583	0350	34156		2719	14732
030	0778	0331	34288		2731	14758
030	0971	0299	34366		2740	14778
030	1165	0273	34429		2748	14800
030	1454	0238	34500		2756	14834

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0560 B	32667		2578	14704	0000	00000	2223
0010	0568	32644		2575	14708	0023	00001	2250
0020	0571	32664		2577	14711	0045	00005	2239
0030	0569	32690		2579	14713	0068	00010	2219
0050	0569	32659		2577	14715	0112	00029	2244
0075	0568	32665		2577	14719	0169	00065	2242
0100	0570	3268 D		2578	14724	0225	00116	2238
0125	0553	3280 F		2589	14723	0280	00179	2131
0150	0486	3341 B		2646	14708	0327	00244	1597
0175	0468	33617		2664	14707	0365	00308	1427
0200	0441	3370 B		2673	14701	0400	00374	1338
0225	0420	3373 C		2678	14697	0433	00447	1294
0250	0402	33753		2681	14694	0466	00525	1263
0300	0377	33839		2691	14692	0527	00698	1176
0400	0366	33966		2702	14706	0641	01105	1079
0500	0367	34087		2712	14725	0746	01587	0996

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0348	34169		2720	14734	0842	02133	0923
0700	0338	34241		2727	14748	0933	02736	0866
0800	0328	34299		2732	14761	1018	03392	0819
1000	0295	34376		2741	14781	1176	04844	0739
1200	0268	34440		2749	14804	1319	06458	0674

C-REF-NO 011	YR 1966	DEPTH C 4297	WAVES 1 2522	AIR T 05.5	VIS 7
CONS. NO 018	MONTH 1	MXSAMPD 15	WAVES 2 2723	WET B 03.8	STN NS
LAT 49-18 N	DAY 17	NO.DPTH 20	WND-DIR 250	WW-CODE 02	
LON 145-00 W	HR 11.6	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1035.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
116	0000	061 B	32663		2572	14724
116	0010	0604	32641		2571	14723
116	0020	0605	32641		2571	14725
116	0030	0603	32643		2571	14726
116	0050	0602	32642		2571	14729
116	0075	0601	32638		2571	14732
116	0100	0600	32637		2571	14736
116	0125	0558	32957		2601	14727
116	0150	0492	33320		2638	14709
116	0175	0426	33525		2661	14688
116	0200	0387	33647		2675	14678
116	0250	0360	33736		2684	14676
116	0300	0351	33815		2691	14681
116	0400	0356	33989		2705	14702
121	0493	0358	34101		2714	14720
121	0594	0350	34206		2723	14735
121	0794	0326	34310		2733	14759
121	0991	0292	34399		2743	14779
121	1190	0264	34460		2751	14801
121	1484	0229	34530		2759	14836

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0610 B	32663		2572	14724	0000	00000	2283
0010	0604	32641		2571	14723	0023	00001	2294
0020	0605	32641		2571	14725	0046	00005	2296
0030	0603	32643		2571	14726	0069	00011	2294
0050	0602	32642		2571	14729	0115	00030	2295
0075	0601	32638		2571	14732	0173	00067	2300
0100	0600	32637		2571	14736	0231	00119	2302
0125	0558	32957		2601	14727	0286	00181	2017
0150	0492	33320		2638	14709	0332	00246	1673
0175	0426	33525		2661	14688	0371	00311	1452
0200	0387	33647		2675	14678	0406	00378	1323
0225	0368	3371 C		2681	14675	0439	00449	1263
0250	0360	33736		2684	14676	0470	00526	1233
0300	0351	33815		2691	14681	0531	00697	1169
0400	0356	33989		2705	14702	0643	01096	1051
0500	0358	34109		2714	14721	0745	01566	0970

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0600	0349	34210		2723	14735	0839	02096	0894
0700	0339	3427 B		2729	14748	0927	02682	0845
0800	0325	34313		2734	14760	1010	03325	0806
1000	0291	34402		2744	14780	1164	04741	0715
1200	0262	34467		2752	14802	1302	06298	0648
1500	0227	34532		2760	14838	1489	08873	0576

C-REF-NO 011	YR 1966	DEPTH C 4297	WAVES 1 2222	AIR T 07.2	VIS 7
CONS. NO 019	MONTH 1	MXSAMPD 15	WAVES 2 2223	WET B 06.1	STN NG
LAT 49-18 N	DAY 17	NO.DPTH 20	WND-DIR 220	WW-CODE 02	
LON 146-05 W	HR 19.9	W-COLOR 40	WND-SPD 04	CLD-TPE 4	
MARSD SQ 159	C/I 1802	W-TRNSP 13	BARO 1036.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	061 B	32714		2576	14725
199	0010	0591	32694		2577	14718
199	0020	0593	32684		2576	14721
199	0030	0591	32684		2576	14721
199	0050	0591	32687		2576	14725
199	0075	0590	32690		2576	14728
199	0100	0586	32688		2577	14731
199	0125	0508	33047		2614	14708
199	0150	0459	33528		2658	14698
199	0175	0478	33707		2670	14713
199	0200	0448	33742		2676	14705
199	0250	0409	33790		2684	14697
199	0300	0383	33855		2692	14695
199	0400	0361	33984		2704	14704
204	0500	0358	34094		2713	14721
204	0600	0351	34176		2720	14736
204	0800	0323 B	34311		2734	14759
204	1000	0291	34401		2744	14780
204	1200	0262 B	34457		2751	14801
204	1500	0231	34527		2759	14839

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0610 B	32714		2576	14725	0000	00000	2245
0010	0591	32694		2577	14718	0023	00001	2239
0020	0593	32684		2576	14721	0045	00005	2250
0030	0591	32684		2576	14721	0068	00010	2249
0050	0591	32687		2576	14725	0113	00029	2249
0075	0590	32690		2576	14728	0170	00065	2248
0100	0586	32688		2577	14731	0226	00116	2248
0125	0508	33047		2614	14708	0278	00176	1893
0150	0459	33528		2658	14698	0321	00235	1482
0175	0478	33707		2670	14713	0357	00295	1371
0200	0448	33742		2676	14705	0391	00360	1315
0225	0426	33767		2680	14700	0423	00431	1275
0250	0409	33790		2684	14697	0455	00508	1242
0300	0383	33855		2692	14695	0516	00680	1171
0400	0361	33984		2704	14704	0628	01081	1060
0500	0358	34094		2713	14721	0731	01556	0982

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0351	34176		2720	14736	0828	02098	0921
0700	0338	34249		2727	14748	0918	02698	0861
0800	0323 B	34311		2734	14759	1002	03346	0805
1000	0291	34401		2744	14780	1156	04763	0717
1200	0262 B	34457		2751	14801	1295	06331	0655
1500	0231	34527		2759	14839	1483	08937	0584

C-REF-NO 011 YR 1966 DEPTH C 3730 WAVES 1 1821 AIR T 06.1 VIS 7
 CONS. NO 020 MONTH 1 MXSAMPD 15 WAVES 2 1821 WET B 05.5 STN OG
 LAT 50-00 N DAY 18 NO.DPTH 20 WND-DIR 180 WW-CODE 03
 LON 146-06 W HR 04.6 W-COLOR WND-SPD 07 CLD-TPE 7
 MARSD SQ 195 C/I 1802 W-TRNSP BARO 1036.0 CLD-AMT 7 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
046	0000	057 B	32680		2578	14708
046	0010	0571	32661		2576	14710
046	0020	0573	32659		2576	14712
046	0030	0572	32660		2576	14713
046	0049	0571	32662		2576	14716
046	0074	0570	32662		2577	14720
046	0099	0572	32664		2577	14725
046	0123	0486	33086		2620	14699
046	0148	0437	33358		2647	14686
046	0173	0380	33672		2677	14671
046	0197	0362	33682		2680	14667
046	0247	0346	33819		2692	14670
046	0296	0360	33859		2694	14685
046	0395	0354	33997		2706	14701
052	0489	0357	34119		2715	14719
052	0593	0338	34206		2724	14729
052	0794	0317	34326		2735	14755
052	0991	0288	34409		2745	14777
052	1188	0261	34470		2752	14799
052	1481	0231	34525		2759	14836

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	32680		2578	14708	0000	00000	2225
0010	0571	32661		2576	14710	0022	00001	2241
0020	0573	32659		2576	14712	0045	00005	2246
0030	0572	32660		2576	14713	0068	00010	2245
0050	0571	32662		2576	14716	0113	00029	2244
0075	0571	32658		2576	14720	0169	00065	2250
0100	0569	3268 B		2578	14724	0226	00116	2235
0125	0481	33110		2622	14698	0277	00174	1817
0150	0432	3339 B		2649	14685	0319	00234	1559
0175	0378	3368 B		2678	14670	0355	00293	1289
0200	0360	33689		2681	14667	0387	00355	1265
0225	0349	3376 D		2687	14667	0419	00423	1207
0250	0347	33823		2693	14671	0448	00495	1155
0300	0360	33864		2695	14686	0506	00659	1141
0400	0354	34004		2706	14702	0616	01051	1038
0500	0355	34130		2716	14720	0717	01514	0952

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0337	34211		2724	14730	0809	02035	0880
0700	0326	34276		2731	14743	0896	02611	0827
0800	0316	34329		2736	14756	0977	03238	0784
1000	0287	34412		2745	14778	1128	04625	0704
1200	0260	34474		2752	14801	1264	06161	0641
1500	0229	34527		2759	14839	1450	08737	0583

C-REF-NO 011	YR 1966	DEPTH C 4352	WAVES 1 1821	AIR T 06.6	VIS 7
CONS. NO 021	MONTH 1	MXSAMPD 15	WAVES 2 2022	WET B 05.5	STN GG
LAT 50-42 N	DAY 18	NO.DPTH 20	WND-DIR 180	WW-CODE 02	
LON 146-06 W	HR 11.6	W-COLOR	WND-SPD 10	CLD-TPE 7	
MARSD SQ 195	C/I 1802	W-TRNSP	BARO 1033.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
116	0000	051 B	32642		2582	14683
116	0010	0501	32637		2583	14681
116	0020	0502	32637		2582	14683
116	0030	0501	32636		2582	14684
116	0050	0500	32638		2583	14687
116	0075	0499	32637		2583	14691
116	0100	0488	32710		2590	14691
116	0125	0403	33107		2630	14665
116	0150	0359	33508		2666	14656
116	0175	0331	33628		2679	14650
116	0200	0324	33684		2684	14651
116	0250	0333	33780		2690	14665
116	0300	0336	33892		2699	14676
116	0400	0346	34030		2709	14698
123	0500	0348	34134		2717	14717
123	0600	0337	34215		2725	14730
123	0800	0308	34336		2737	14753
123	1000	0282	34409		2745	14776
123	1200	0257	34469		2752	14799
123	1500	0226	34535		2760	14837

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0510 B	32642		2582	14683	0000	00000	2187
0010	0501	32637		2583	14681	0022	00001	2182
0020	0502	32637		2582	14683	0044	00005	2184
0030	0501	32636		2582	14684	0066	00010	2185
0050	0500	32638		2583	14687	0110	00028	2184
0075	0499	32637		2583	14690	0165	00063	2186
0100	0488	32710		2590	14691	0219	00112	2122
0125	0403	33107		2630	14665	0268	00168	1739
0150	0359	33508		2666	14656	0307	00223	1397
0175	0331	33628		2679	14650	0341	00279	1282
0200	0324	33684		2684	14651	0373	00340	1235
0225	0327	33732		2687	14657	0403	00407	1203
0250	0333	33780		2690	14665	0433	00480	1174
0300	0336	33892		2699	14676	0491	00641	1097
0400	0346	34030		2709	14698	0597	01021	1010
0500	0348	34134		2717	14717	0695	01475	0942

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0600	0337	34215		2725	14730	0787	01993	0877
0700	0323	34282		2731	14742	0873	02564	0820
0800	0308	34336		2737	14753	0953	03183	0770
1000	0282	34409		2745	14776	1102	04555	0701
1200	0257	34469		2752	14799	1238	06089	0641
1500	0226	34535		2760	14837	1423	08641	0573

C-REF-NO 011	YR 1966	DEPTH C 4279	WAVES 1 1823	AIR T 06.6	VIS 6
CONS. NO 022	MONTH 1	MXSAMPD 14	WAVES 2 1833	WET B 05.5	STN GS
LAT 50-42 N	DAY 18	NO. DPTH 20	WND-DIR 180	WW-CODE 02	
LON 145-00 W	HR 19.5	W-COLOR 20	WND-SPD 12	CLD-TPE 4	
MARSD SQ 195	C/I 1802	W-TRNSP 16	BARO 1031.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
195	0000	054 B	32660		2580	14695
195	0009	0527	32661		2582	14692
195	0018	0529	32659		2581	14694
195	0027	0527	32654		2581	14694
195	0046	0527	32658		2581	14698
195	0068	0526	32660		2582	14701
195	0091	0528	32659		2581	14705
195	0114	0528	32661		2581	14709
195	0137	0439	33180		2632	14683
195	0160	0375	33516		2665	14664
195	0184	0353	33643		2678	14661
195	0232	0344	33714		2684	14666
195	0279	0344	33801		2691	14675
195	0377	0351	33960		2703	14696
200	0451	0354	34063		2711	14711
200	0546	0349	34158		2719	14726
200	0739	0325	34292		2732	14749
200	0930	0297	34378		2741	14770
200	1124	0272	34439		2748	14793
200	1412	0237				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	0540 B	32660		2580	14695	0000	00000	2206
0010	0527	32661		2582	14692	0022	00001	2192
0020	0529	32658		2581	14694	0044	00005	2197
0030	0527	32654		2581	14695	0066	00010	2199
0050	0527	32659		2581	14698	0111	00028	2197
0075	0527	32660		2581	14702	0166	00064	2199
0100	0533 B	3263 G		2578	14709	0222	00114	2232
0125	0489 C	3289 I		2604	14698	0275	00175	1992
0150	0399	33394		2653	14671	0319	00237	1521
0175	0358	3361 B		2675	14661	0355	00296	1319
0200	0347	3368 C		2681	14661	0387	00358	1260
0225	0344	3371 B		2684	14664	0419	00427	1235
0250	0343	33747		2687	14669	0450	00502	1209
0300	0345	33837		2694	14679	0509	00669	1146
0400	0352	33994		2706	14701	0619	01064	1043
0500	0352	34116		2715	14719	0721	01529	0960

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0343	34202		2723	14733	0814	02057	0894
0700	0331	34270		2730	14745	0902	02640	0837
0800	0316	34323		2735	14756	0984	03273	0788
1000	0288	34407		2744	14778	1135	04668	0709
1200	0262							

C-REF-NO 011	YR 1966	DEPTH C 4220	WAVES 1 1734	AIR T 07.7	VIS 6
CONS. NO 023	MONTH 1	MXSAMPD 41	WAVES 2 1746	WET B 06.6	STN 507
LAT 50-04 N	DAY 19	NO-DPTH 26	WND-DIR 170	W-CODE 02	
LON 144-53 W	HR 18.9	W-COLOR 40	WND-SPD 10	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP 14	BARO 1025.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	059 B	32669	710	2575	14716
189	0010	0573	32669	708	2577	14711
189	0020	0574	32658	709	2576	14713
189	0030	0571	32659	705	2576	14713
189	0050	0570	32660	703	2576	14716
189	0074	0569	32659	701	2576	14719
189	0099	0570	32661	701	2577	14724
189	0124	0495	32970	643	2610	14701
189	0149	0459	33301	556	2640	14695
189	0174	0392	33565	450	2668	14674
189	0199	0365		398		
189	0248	0352	33758	282	2687	14672
189	0298	0354	33863	200	2695	14683
189	0397	0354	34007	133	2706	14701
189	0496	0361	34109	096	2714	14722
189	0595	0348	34197	086	2722	14734
200	0776	0326	34313	080	2733	14756
200	0973	0295	34398	064	2743	14777
200	1167	0269	34451	072	2750	14799
200	1452	0238	34513	070	2757	14834
200	1928	0198	34595	135	2767	14899
200	2412	0177	34636	201	2772	14973
200	2903	0164	34668	254	2776	15052
200	3397	0154 B	34685	300	2778	15134
200	3894	0153	34696	326	2779	15221
200	4094	0155 C	34701	333	2779	15257

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA.
0000	0590 B	32669	710	2575	14716	0000	00000	2256
0010	0573	32669	708	2577	14711	0023	00001	2237
0020	0574	32658	709	2576	14713	0045	00005	2248
0030	0571	32659	705	2576	14713	0068	00010	2245
0050	0570	32660	703	2576	14716	0113	00029	2245
0075	0570	32656	702	2576	14720	0170	00065	2250
0100	0567	32670	700	2578	14723	0226	00116	2239
0125	0493	32984	640	2611	14701	0278	00176	1925
0150	0456	33313	551	2641	14694	0323	00239	1640
0175	0390	33571	447	2668	14674	0361	00302	1382

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-U	POT. EN	SVA
0200	0364	3369 I	396	2680	14669	0395	00366	1272
0225	0354	3375 I	335	2686	14669	0426	00434	1217
0250	0352	33763	278	2687	14673	0457	00509	1206
0300	0354	33867	198	2695	14683	0516	00675	1133
0400	0354	34011	131	2707	14702	0625	01065	1033
0500	0361	34113	095	2714	14722	0726	01531	0971
0600	0347	34201	086	2723	14734	0821	02063	0899
0700	0335	34270	082	2729	14747	0909	02650	0842
0800	0322	34325	078	2735	14759	0991	03286	0794
1000	0291	34407	065	2744	14780	1144	04690	0713
1200	0265	34459	071	2751	14803	1282	06256	0657
1500	0233	34523	075	2758	14840	1472	08879	0590
2000	0194	34603	145	2768	14909	1751	13857	0507
2500	0174	34643	211	2773	14987	2000	19627	0472
3000	0162	34672	264	2776	15068	2236	26300	0450
3500	0153 B	34687	307	2778	15152	2463	33962	0441
4000	0154 B	34699	330	2779	15240	2692	42830	0448

SECTION IV

Bathythermograms

EXPLANATION OF DATA HEADINGS

CON No:	The consecutive BT slide number.
LAT: }	Position of platform at time of BT lowering.
LONG: }	
DATE:	
Day	Day
Mon	Month
Yr	Year
TIME: Hrs	The Greenwich Mean Time at which the BT lowering was made.
Min	
DEPTH:	The sounding reported in metres.
BAR: Mbs	Barometric pressure; prefix all listed values by 10 or by 9 if a minus (-) sign is present to obtain the pressure in whole millibars. eg: 02 = 1002 mbs 17 = 1017 mbs -98 = 998 mbs -86 = 986 mbs.
WW Code:	Refer to Table 7, Section II
WIND Amt:	Wind speed in meters per second
WAVES - 1: P H	Refer to Tables 4 & 5, Section II
WAVES - 11: P H	Refer to Tables 4 & 5, Section II
CLOUD: T A	Refer to Tables 8 & 9, Section II

CCGS "ST. CATHARINES" P - 65 - 5

BATHYTHERMOGRAMS

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Aml	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
001	48	33	125	33	11	12	65	00	20		16	60	25	22	22	6	7		
002	48	38	126	00	11	12	65	02	16		14	63	25	22	22	X	9		
003	48	42	126	40	11	12	65	04	43	0711	13	63	25	23	33	7	8		
004	49	02	130	40	11	12	65	20	00	1602	25	01	21	33	34	0	3		
005	49	04	131	40	11	12	65	23	00	1572	26	02	10	22	24	8	5		
006	49	10	132	40	12	12	65	02	44	1791	27	02	13	22	34	X	7		
007	49	12	133	40	12	12	65	06	45	1750	27	03	13	22	33	4	5		
008	49	17	134	40	12	12	65	10	28	1941	25	20	12	21	24	X	9		
009	49	21	135	40	12	12	65	14	15	1750	22	02	10	21	23	X	9		
010	49	26	136	40	12	12	65	18	00	2064	25	03	25	33	44	6	6		
011	49	30	137	40	12	12	65	22	00	2105	27	02	25	33	44	2	1		
012	49	34	138	40	13	12	65	01	32	2127	29	02	10	21	35	2	4		
013	49	37	139	40	13	12	65	05	20	2100	29	03	15	22	34	6	6		
014	49	41	140	40	13	12	65	08	55	2122	27	02	15	22	34	6	5		
015	49	45	141	40	13	12	65	13	00	2171	21	61	25	23	34	X	9		
016	49	49	142	40	13	12	65	19	22	2138	16	02	30	34	44	7	9		
017	49	44	143	40	14	12	65	04	00		-99	02	40	34	46	X	9		
018	49	57	144	59	15	12	65	18	00	2308	21	02	20	34	47	6	7		
019	49	57	144	59	15	12	65	18	30	2308	22	02	17	23	34	6	7		
020	49	58	144	58	15	12	65	19	07	2308	21	02	18	23	34	6	7		
021	50	02	144	54	16	12	65	00	0	2308	16	21	22	35	45	4	8		
022	50	06	144	52	16	12	65	03	00	2308	13	10	20	24	45	7	8		
023	50	07	144	50	16	12	65	06	00	2308	11	10	18	34	34	7	8		
024	50	10	144	47	16	12	65	09	00	2308	11	44	16	33	34	7	6		
025	50	13	144	44	16	12	65	12	00	2308	11	10	19	33	44	7	5		
026	50	05	144	52	16	12	65	15	00	2308	10	10	12	32	45	7	2		
027	50	01	145	00	16	12	65	18	00	2308	08	10	00	00	45	7	8		
028	50	00	143	54	17	12	65	00	38	2250	06	41	00	XX	23	X	9		
029	50	42	143	52	17	12	65	08	20	2170	06	02	05	22	32	6	8		
030	50	08	144	55	18	12	65	03	00	2308	16	02	25	49	00	6	8		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
031	50	11	145	01	18	12	65	06	00	2308	17	02	21	49	00	6	8		
032	50	17	145	08	18	12	65	09	00	2308	17	01	14	33	48	6	5		
033	50	22	145	13	18	12	65	12	00	2308	15	02	22	34	46	6	8		
034	50	16	145	15	18	12	65	15	00	2308	12	02	29	35	36	6	8		
035	50	13	145	14	18	12	65	18	00	2308	08	61	34	36	35	7	8		
036	50	07	145	12	18	12	65	21	00	2308	04	61	40	47	54	7	8		
037	50	00	145	12	19	12	65	00	0	2308	02	51	31	47	44	7	8		
038	49	55	145	16	19	12	65	03	00	2308	04	51	32	47	44	7	8		
039	49	51	145	25	19	12	65	06	00	2308	05	10	27	37	44	7	8		
040	50	01	145	11	19	12	65	09	00	2308	04	61	22	37	44	7	8		
041	50	07	145	05	19	12	65	12	00	2308	02	61	15	36	44	7	8		
042	50	12	144	58	19	12	65	15	00	2308	01	02	19	36	44	7	8		
043	50	09	144	54	19	12	65	18	00	2308	03	02	27	46	44	3	7		
044	50	04	145	00	19	12	65	21	00	2308	05	02	30	46	44	6	7		
045	50	04	145	06	20	12	65	00	0	2308	05	02	33	49	43	8	1		
046	50	07	145	13	20	12	65	03	00	2308	06	15	35	49	43	9	1		
047	50	06	145	20	20	12	65	06	00	2308	07	02	32	59	42	8	1		
048	50	04	145	25	20	12	65	09	00	2308	10	03	42	59	00	8	3		
049	50	04	145	37	20	12	65	12	00	2308	12	02	46	59	00	8	2		
050	50	05	145	45	20	12	65	15	00	2308	15	87	35	59	00	9	7		
051	49	58	145	54	20	12	65	18	00	2308	17	25	25	59	00	9	7		
052	50	00	145	34	20	12	65	21	00	2308	19	25	24	59	38	9	6		
053	50	01	145	25	21	12	65	00	0	2308	21	02	30	49	37	9	3		
054	49	59	144	52	21	12	65	03	00	2308	23	25	23	48	00	9	3		
055	50	00	144	36	21	12	65	06	00	2308	24	02	26	46	00	8	3		
056	50	01	144	46	21	12	65	09	00	2308	24	02	28	46	00	8	2		
057	50	01	144	54	21	12	65	12	00	2308	24	02	34	47	46	8	2		
058	50	02	144	57	21	12	65	15	00	2308	23	03	35	48	46	8	4		
059	50	03	145	02	21	12	65	18	00	2308	21	02	27	38	46	8	4		
060	50	03	145	10	21	12	65	21	00	2308	18	02	29	37	46	6	8		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
061	50	02	145	16	22	12	65	00	0	2308	12	61	34	39	45	7	8		
062	50	01	145	23	22	12	65	03	00	2308	07	61	33	39	45	7	8		
063	49	56	145	25	22	12	65	06	00	2308	08	01	34	36	39	8	4		
064	49	55	145	30	22	12	65	09	00	2308	10	01	35	38	39	8	2		
065	49	55	145	37	22	12	65	12	00	2308	11	02	41	39	38	8	2		
066	49	59	145	10	22	12	65	15	00	2308	10	25	34	39	37	9	3		
067	50	01	144	54	22	12	65	18	00	2308	12	26	34	37	38	9	6		
068	50	05	145	03	22	12	65	21	00	2308	13	15	41	29	39	9	4		
069	50	07	145	13	23	12	65	00	0	2308	13	15	37	49	38	9	5		
070	50	07	145	26	23	12	65	03	00	2308	14	26	30	49	38	9	5		
071	50	10	145	35	23	12	65	06	00	2308	13	85	44	49	00	9	6		
072	50	05	145	15	23	12	65	09	00	2308	12	85	37	49	00	9	5		
073	49	58	145	01	23	12	65	12	00	2308	10	26	47	49	00	9	4		
074	49	57	145	10	23	12	65	15	00	2308	10	85	52	59	00	X	9		
075	49	54	145	20	23	12	65	18	00	2308	10	26	40	59	00	9	5		
076	49	58	145	30	23	12	65	21	00	2308	10	26	44	59	00	9	5		
077	50	04	145	44	24	12	65	00	0	2308	10	26	41	59	00	9	7		
078	50	12	145	57	24	12	65	03	00	2308	12	25	34	59	00	9	7		
079	50	12	146	05	24	12	65	06	00	2308	15	03	42	59	00	8	8		
080	49	49	145	47	24	12	65	09	00	2308	15	02	34	59	00	8	8		
081	49	49	145	34	24	12	65	12	00	2308	17	85	36	59	00	9	5		
082	49	49	145	23	24	12	65	15	00	2308	19	02	35	59	00	9	4		
083	49	59	145	25	24	12	65	18	00	2308	21	15	31	59	00	9	6		
084	50	01	145	27	24	12	65	21	00	2308	23	15	24	58	00	9	6		
085	50	07	145	29	25	12	65	00	0	2308	23	02	21	47	00	9	7		
086	50	04	145	20	25	12	65	03	00	2308	23	02	18	47	00	9	7		
087	50	00	144	58	25	12	65	06	00	2308	23	02	21	45	00	8	7		
088	50	00	144	54	25	12	65	09	00	2308	22	86	13	44	00	9	8		
089	50	00	144	48	25	12	65	12	00	2308	20	71	11	44	00	6	8		
090	49	58	144	45	25	12	65	15	00	2308	19	85	10	44	00	6	8		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
091	49	54	144	52	25	12	65	18	00	2308	19	01	27	44	33	9	3		
092	50	00	145	02	25	12	65	21	00	2308	18	02	19	44	22	8	3		
093	50	00	145	01	26	12	65	00	0	2308	18	15	12	44	00	8	4		
094	49	56	144	59	26	12	65	03	00	2308	18	26	10	43	00	8	6		
095	49	53	144	58	26	12	65	06	00	2308	17	01	21	43	00	8	2		
096	49	50	144	57	26	12	65	09	00	2308	16	86	25	45	00	X	9		
097	49	48	145	01	26	12	65	12	00	2308	17	28	23	46	00	8	2		
098	50	00	145	00	26	12	65	15	00	2308	20	23	36	48	00	8	3		
099	49	58	145	00	26	12	65	18	00	2308	22	27	34	49	45	9	5		
100	50	00	144	56	26	12	65	21	00	2308	24	27	34	49	45	9	6		
101	50	05	144	54	27	12	65	00	0	2308	24	02	38	49	44	6	6		
102	50	15	144	50	27	12	65	03	00	2308	26	02	37	49	44	6	8		
103	50	22	144	46	27	12	65	06	00	2308	25	02	32	46	43	6	6		
104	50	12	144	45	27	12	65	09	00	2308	24	02	24	47	44	6	8		
105	50	03	144	54	27	12	65	12	00	2308	21	02	30	35	45	6	8		
106	50	00	145	04	27	12	65	15	00	2308	18	02	24	33	46	6	8		
107	49	55	145	06	27	12	65	18	00	2308	15	21	23	33	46	6	7		
108	49	55	145	06	27	12	65	18	30	2308	16	88	21	22	33	7	8		
109	49	53	145	08	27	12	65	21	00	2308	13	02	29	46	33	6	7		
110	49	53	145	02	28	12	65	00	0	2308	13	02	33	48	00	8	6		
111	49	52	144	50	28	12	65	03	00	2308	14	02	33	49	00	8	7		
112	49	55	144	33	28	12	65	06	00	2308	15	01	33	49	00	8	2		
113	50	17	145	06	03	01	66	06	00	2308	09	85	15	33	00	6	6		
114	50	05	145	02	03	01	66	09	00	2308	08	02	15	33	00	6	6		
115	49	59	144	58	03	01	66	12	00	2308	07	01	12	33	00	6	5		
116	49	58	145	00	03	01	66	15	00	2308	06	26	17	33	00	9	4		
117	49	55	145	02	03	01	66	18	00	2308	06	15	16	33	42	9	3		
118	49	55	145	02	03	01	66	18	30	2308	08	02	10	22	34	5	3		
119	49	53	145	02	03	01	66	21	00	2308	06	15	13	45	58	9	5		
120	49	50	145	04	04	01	66	00	0	2308	05	85	08	33	48	8	8		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
121	50	00	145	04	04	01	66	03	00	2308	04	02	15	33	47	6	7		
122	49	57	145	04	04	01	66	06	00	2308	03	26	14	33	46	9	6		
123	49	56	145	04	04	01	66	09	00	2308	02	86	12	22	46	9	7		
124	49	53	145	07	04	01	66	12	00	2308	01	02	06	21	XX	9	7		
125	49	55	145	09	04	01	66	15	00	2308	00	02	10	22	XX	6	8		
126	49	58	144	59	04	01	66	18	00	2308	00	15	09	32	43	8	7		
127	49	56	144	59	04	01	66	19	00	2308	01	85	07	22	33	6	6		
128	49	55	145	00	04	01	66	21	00	2308	-99	15	11	32	44	8	7		
129	49	58	144	57	05	01	66	00	0	2308	-97	22	17	33	43	6	7		
130	49	56	145	01	05	01	66	03	00	2308	-96	71	15	33	43	6	7		
131	50	03	145	04	05	01	66	06	00	2308	-95	02	16	33	XX	6	7		
132	50	00	145	09	05	01	66	09	00	2308	-94	27	16	33	XX	6	8		
133	50	02	145	08	05	01	66	12	00	2308	-94	02	16	33	XX	6	8		
134	50	02	144	59	05	01	66	15	00	2308	-95	02	21	34	XX	6	8		
135	50	02	145	04	05	01	66	18	00	2308	-96	02	19	34	35	6	7		
136	50	01	145	06	05	01	66	21	00	2308	-99	02	10	33	35	6	7		
137	50	01	145	09	06	01	66	00	0	2308	-99	26	03	21	34	9	7		
138	49	58	145	11	06	01	66	03	00	2308	02	15	08	21	34	9	4		
139	50	00	145	07	06	01	66	06	00	2308	03	02	09	21	XX	8	5		
140	50	02	145	00	06	01	66	09	00	2308	06	02	04	21	XX	2	7		
141	50	00	145	01	06	01	66	12	00	2308	08	02	04	21	XX	2	7		
142	50	01	145	04	06	01	66	15	00	2308	08	02	08	22	XX	2	7		
143	50	04	145	06	06	01	66	18	00	2308	09	02	12	22	34	4	8		
144	50	04	145	06	06	01	66	18	30	2308	11	02	08	22	33	4	7		
145	50	04	145	07	06	01	66	21	00	2308	10	70	11	22	34	6	7		
146	50	08	145	07	07	01	66	00	0	2308	09	15	17	23	34	6	7		
147	50	09	145	09	07	01	66	03	00	2308	10	80	14	23	34	6	8		
148	50	10	145	10	07	01	66	06	00	2308	11	61	12	53	XX	6	8		
149	50	05	145	01	07	01	66	09	00	2308	11	02	12	53	XX	8	7		
150	50	01	145	01	07	01	66	12	00	2308	10	02	04	33	34	8	2		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-1		W-11		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
151	50	01	145	00	07	01	66	15	00	2308	09	02	00	20	33	3	4		
152	50	01	145	03	07	01	66	18	00	2308	09	15	04	20	33	9	3		
153	50	02	145	02	07	01	66	21	00	2308	09	01	09	20	23	8	2		
154	50	01	145	03	08	01	66	00	0	2308	08	15	13	22	23	6	5		
155	49	58	145	03	08	01	66	03	00	2308	10	02	12	22	23	6	6		
156	49	59	145	05	08	01	66	06	00	2308	09	02	13	23	22	6	7		
157	50	01	145	05	08	01	66	09	00	2308	09	02	08	23	22	6	5		
158	50	01	145	05	08	01	66	12	00	2308	07	02	12	23	22	4	7		
159	50	01	145	10	08	01	66	15	00	2308	06	02	17	23	00	6	8		
160	50	01	145	14	08	01	66	18	00	2308	04	61	22	34	00	7	8		
161	50	00	145	20	08	01	66	21	00	2308	02	61	27	36	34	7	8		
162	50	07	145	18	09	01	66	00	0	2308	00	51	33	37	00	7	8		
163	50	03	145	10	09	01	66	03	00	2308	00	10	31	37	00	7	8		
164	50	04	145	00	09	01	66	06	00	2308	00	51	28	37	00	7	8		
165	50	04	145	01	09	01	66	09	00	2308	00	02	16	36	00	7	7		
166	50	03	145	02	09	01	66	12	00	2308	01	20	25	37	00	7	8		
167	50	02	145	01	09	01	66	15	00	2308	01	02	24	38	00	6	8		
168	50	00	145	03	09	01	66	18	00	2308	02	50	17	36	46	7	8		
169	50	01	145	08	09	01	66	21	00	2308	03	61	15	36	46	7	8		
170	50	03	145	06	10	01	66	00	0	2308	03	58	15	34	46	7	8		
171	50	03	145	02	10	01	66	03	00	2308	05	51	11	33	46	7	8		
172	50	00	145	05	10	01	66	06	00	2308	05	20	12	33	46	7	7		
173	50	04	145	08	10	01	66	09	00	2308	06	02	13	33	46	6	7		
174	50	05	145	07	10	01	66	12	00	2308	06	47	13	33	XX	X	9		
175	50	06	145	11	10	01	66	15	00	2308	06	02	09	22	XX	7	8		
176	50	03	145	03	10	01	66	18	00	2308	04	61	21	33	44	7	8		
177	50	02	144	58	10	01	66	19	00	2308	05	63	12	23	44	7	8		
178	50	06	145	00	10	01	66	21	00	2308	01	51	22	34	44	7	8		
179	50	09	144	59	11	01	66	00	0	2308	-97	47	22	34	45	X	9		
180	50	02	144	58	11	01	66	03	00	2308	-93	61	26	46	45	X	9		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-1		W-11		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
181	50	07	144	59	11	01	66	06	00	2308	-90	61	20	46	45	X	9		
182	50	08	145	00	11	01	66	09	00	2308	-90	02	13	34	XX	7	7		
183	50	12	144	57	11	01	66	12	00	2308	-90	02	25	45	XX	7	7		
184	50	03	145	02	11	01	66	15	00	2308	-92	02	34	47	45	7	8		
185	50	00	145	02	11	01	66	18	00	2308	-94	02	30	37	34	6	6		
186	49	59	145	05	11	01	66	21	00	2308	-95	01	23	37	34	8	5		
187	49	55	145	16	12	01	66	00	0	2308	-92	46	15	24	47	7	8		
188	50	01	145	02	12	01	66	03	00	2308	-88	61	21	34	47	7	8		
189	50	03	145	03	12	01	66	06	00	2308	-82	61	21	34	47	7	8		
190	50	07	144	59	12	01	66	09	00	2308	-83	02	31	47	XX	7	8		
191	50	05	145	04	12	01	66	12	00	2308	-85	02	35	48	XX	7	6		
192	50	02	145	12	12	01	66	15	00	2308	-84	02	37	49	XX	7	8		
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194	49	55	145	30	12	01	66	21	00	2308	-91	02	34	49	00	8	5		
195	49	50	145	38	13	01	66	00	0	2308	-91	02	22	48	00	2	6		
196	49	55	145	20	13	01	66	03	00	2308	-92	03	14	68	34	6	8		
197	50	02	144	57	13	01	66	06	00	2308	-93	02	07	33	XX	6	8		
198	50	00	144	55	13	01	66	09	00	2308	-94	02	10	33	XX	6	8		
199	50	01	144	52	13	01	66	12	00	2308	-94	01	10	34	XX	6	5		
200	50	06	144	49	13	01	66	15	00	2308	-94	02	11	34	46	6	7		
201	50	03	144	57	13	01	66	18	00	2308	-95	02	12	33	55	0	5		
202	50	03	144	57	13	01	66	18	30	2308	-98	02	07	22	34	3	3		
203	50	00	144	57	13	01	66	21	00	2308	-96	14	15	33	43	6	6		
204	50	04	144	54	14	01	66	00	0	2308	-95	51	16	32	44	7	8		
205	50	06	144	53	14	01	66	03	00	2308	-96	02	14	33	44	7	8		
206	50	04	144	54	14	01	66	06	00	2308	-98	02	17	44	XX	7	8		
207	50	08	144	50	14	01	66	09	00	2308	00	02	10	44	XX	7	8		
208	50	09	144	46	14	01	66	12	00	2308	00	10	14	23	XX	7	8		
209	49	58	145	01	14	01	66	15	00	2308	00	47	25	23	XX	X	9		
210	50	03	144	57	14	01	66	18	00	2308	00	51	18	23	45	X	9		

TABLE I

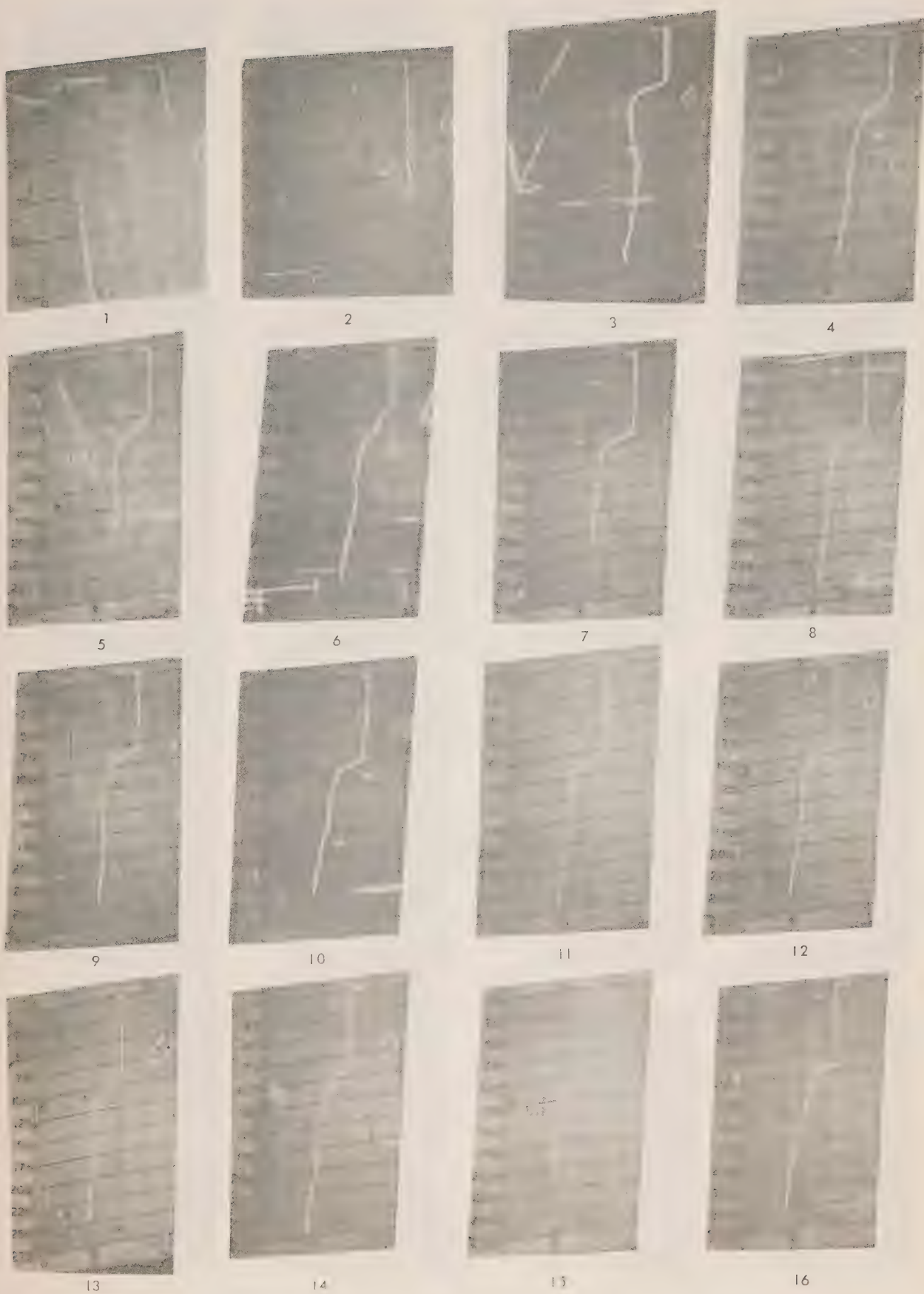
CON No	LAT		LONG		DATE			TIME		DEPTH	BAR	WW	WIND	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	T	A
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212	50	04	144	58	14	01	66	21	00	2308	01	44	21	33	45	6	8		
213	50	04	144	55	15	01	66	00	0	2308	01	51	28	46	33	X	9		
214	49	57	145	00	15	01	66	03	00	2308	01	61	32	46	33	X	9		
215	49	52	145	04	15	01	66	06	00	2308	01	61	26	46	33	7	8		
216	49	43	145	06	15	01	66	09	00	2308	02	47	20	46	33	X	9		
217	49	37	145	11	15	01	66	12	00	2308	03	61	12	22	XX	7	8		
218	49	53	145	03	15	01	66	15	00	2308	06	10	07	22	XX	7	8		
219	50	00	144	57	15	01	66	18	00	2308	09	02	15	22	56	0	4		
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221	50	00	144	55	16	01	66	00	0	2308	12	10	05	20	56	7	7		
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223	50	05	144	55	16	01	66	06	00	2308	15	02	06	21	56	6	8		
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225	50	02	144	51	16	01	66	12	00	2308	14	02	23	33	56	6	8		
226	49	57	144	48	16	01	66	15	00	2308	15	02	23	44	56	6	6		
227	49	58	144	44	16	01	66	18	00	2308	19	15	26	35	45	8	7		
228	49	18	143	55	17	01	66	02	00	2308	28	02	27	23	23	6	8		
229	49	18	145	00	17	01	66	11	06	2308	35	02	15	25	22	6	5		
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231	50	00	146	06	18	01	66	04	15	2308	36	03	15	21	21	7	7		
232	50	42	146	08	18	01	66	11	10	2308	33	02	20	21	22	7	6		
233	50	42	145	00	18	01	66	19	00	2308	31	02	25	23	33	4	8		
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235	50	04	144	53	19	01	66	18	00	2308	25	02	21	34	46	6	3		
236	50	08	144	54	19	01	66	21	00	2308	24	02	26	23	46	6	8		
237	50	08	144	52	20	01	66	00	0	2308	22	02	31	46	23	6	8		
238	50	01	144	55	20	01	66	03	00	2308	20	02	34	47	00	6	8		
239	49	56	144	59	20	01	66	06	00	2308	16	61	33	47	XX	7	8		
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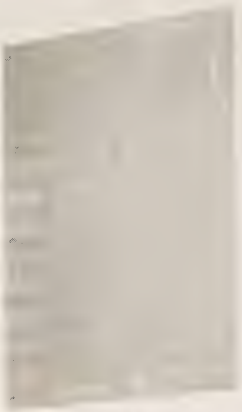
TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min				Amt	P	H	P	H	T	A
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242	49	49	145	10	20	01	66	15	00	2308	15	02	15	XX	XX			7	8
243	49	56	145	07	20	01	66	18	00	2308	13	20	11	24	35			7	7
244	49	59	145	02	20	01	66	21	00	2308	12	46	08	22	35			7	8
245	49	57	145	01	21	01	66	00	0	2308	11	45	16	35	34			X	9
246	49	52	144	57	21	01	66	03	00	2308	13	02	13	33	34			6	8
247	49	57	144	51	21	01	66	06	00	2308	15	01	19	33	34			6	3
248	49	58	144	47	21	01	66	09	00	2308	16	02	22	34	XX			6	8
249	49	58	144	47	21	01	66	12	00	2308	18	25	24	35	XX			6	8
250	49	57	144	56	21	01	66	15	00	2308	19	25	21	35	XX			6	6
251	50	00	144	58	21	01	66	18	00	2308	20	20	15	22	35			7	7
252	50	04	144	54	21	01	66	21	00	2308	20	03	10	44	00			6	8
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256	50	05	144	46	22	01	66	09	00	2308	13	10	11	22	44			7	8
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260	50	09	144	50	22	01	66	21	00	2308	01	10	29	35	44			7	8
261	50	16	144	48	23	01	66	00	0	2308	-97	61	33	36	44			7	8
262	50	03	144	50	23	01	66	03	00	2308	-98	21	24	36	56			7	8
263	49	55	144	55	23	01	66	06	00	2308	00	02	17	36	36			7	7
264	49	57	144	54	23	01	66	09	00	2308	02	02	17	36	36			7	7
265	50	01	144	52	23	01	66	12	00	2308	02	02	13	21	XX			7	8
266	50	03	144	50	23	01	66	15	00	2308	01	02	21	21	XX			7	8
267	50	05	144	48	23	01	66	18	00	2308	01	10	12	21	45			4	7
268	50	07	144	45	23	01	66	21	00	2308	-99	10	12	21	56			7	8
269	50	07	144	44	24	01	66	00	0	2308	-96	45	16	22	56			X	9
270	49	58	143	56	24	01	66	04	00	2250	-90	64	30	33	56			X	9

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH	BAR	WW	WIND	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min	Metres	Mbs	Code	Amt	P	H	P	H	I	A
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273	49	04	131	40	25	01	66	23	45	1572	-95	45	10	21	39	X	9		
274	49	00	130	40	26	01	66	03	00	1602	-98	45	10	21	48	X	9		
275	48	55	129	40	26	01	66	06	15	1422	00	45	12	22	48	7	8		
276	48	51	128	40	26	01	66	09	40	1383	03	45	12	21	38	X	9		
277	48	46	127	40	26	01	66	12	50	1367	04	45	15	22	38	X	9		
278	48	42	126	40	26	01	66	16	00	0711	06	61	15	33	46	7	8		
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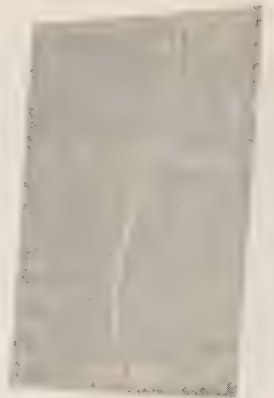
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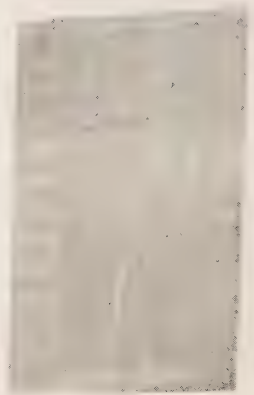
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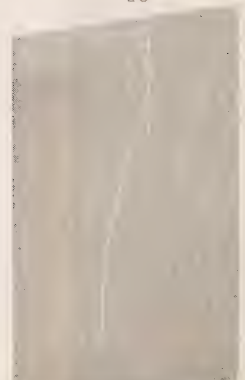
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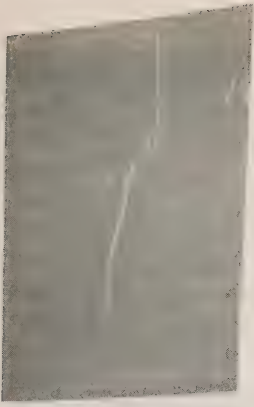
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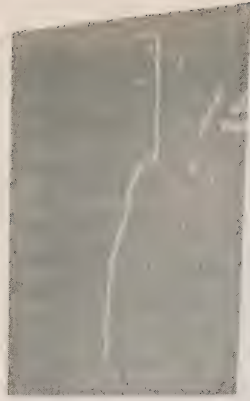
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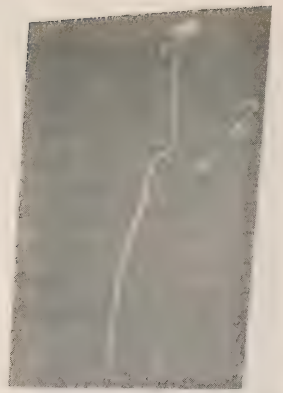
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34



35



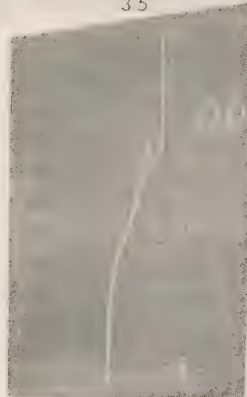
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37



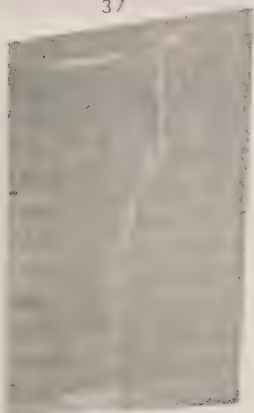
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40



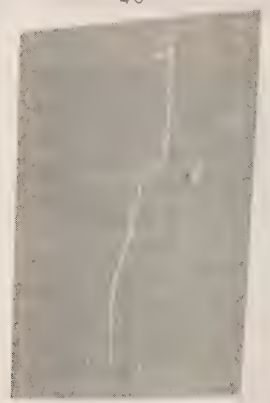
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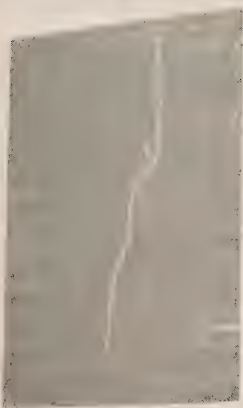
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43



44



45



46



47



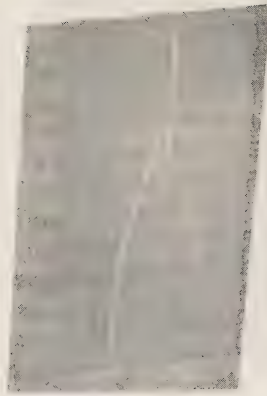
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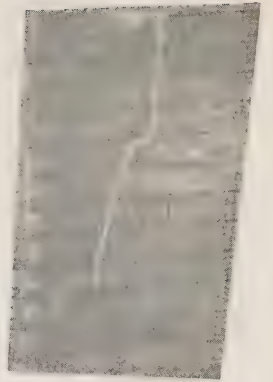
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50



51



52



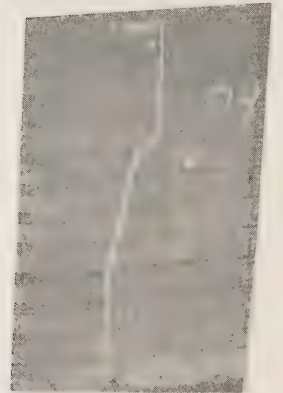
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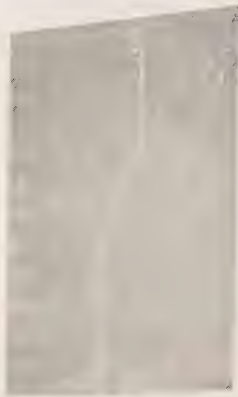
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56



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58



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60



61



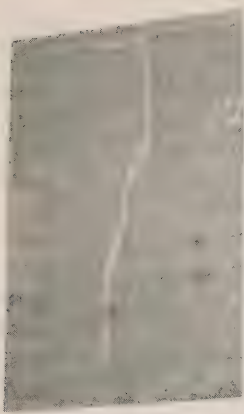
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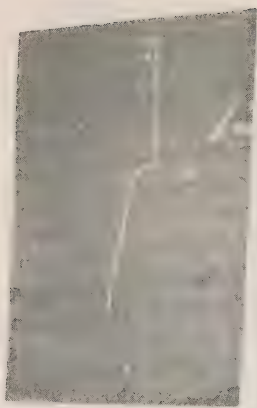
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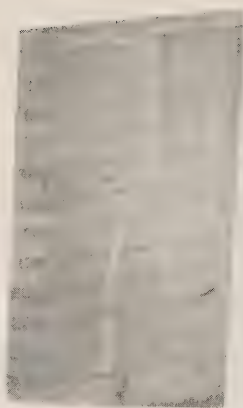
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65



66



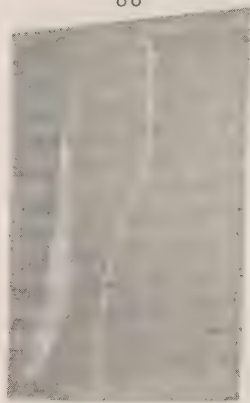
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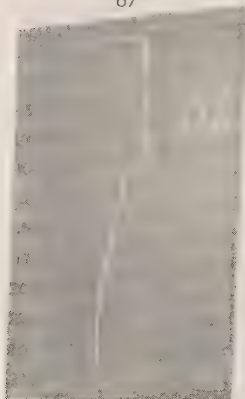
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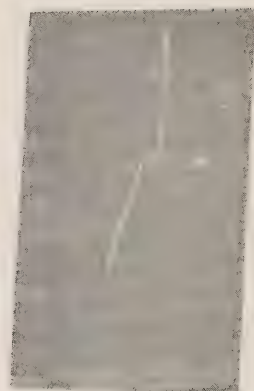
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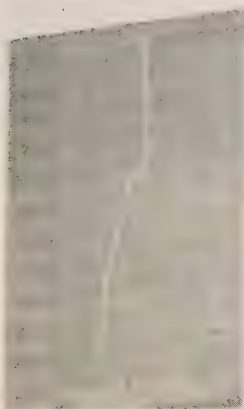
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71



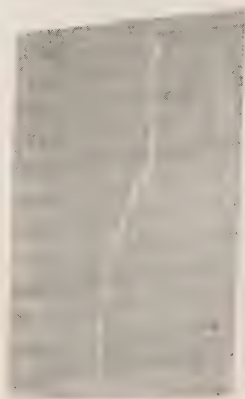
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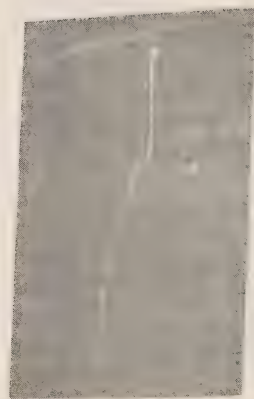
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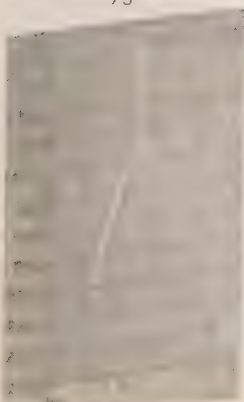
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75



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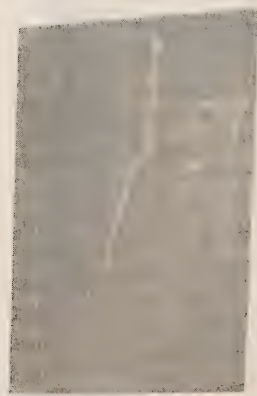
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78



79



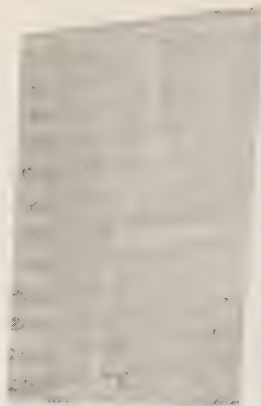
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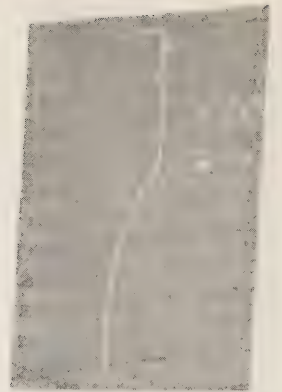
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82



83



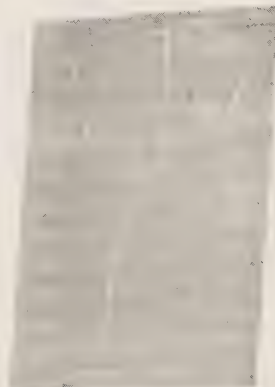
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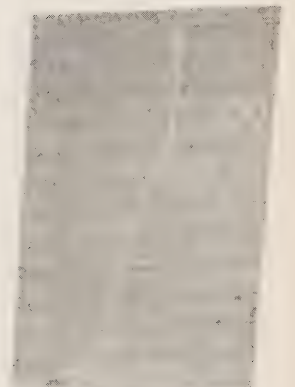
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86



87



88



89



90



91



92



93



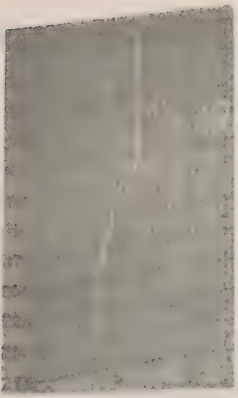
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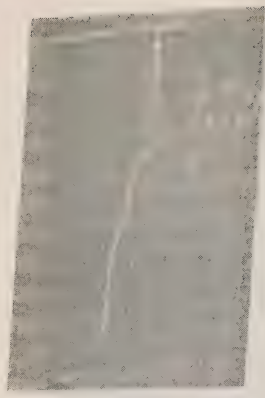
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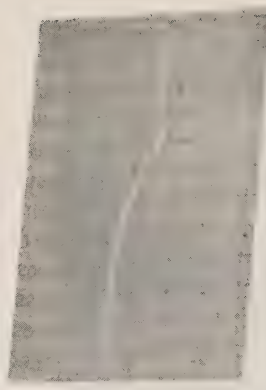
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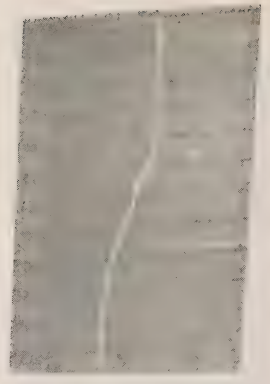
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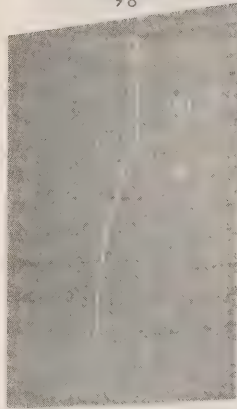
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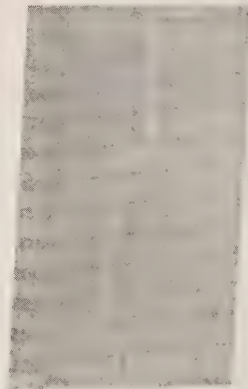
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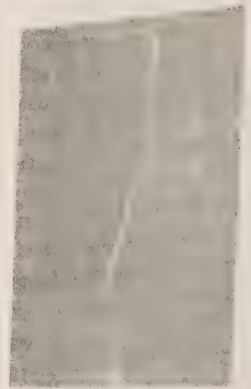
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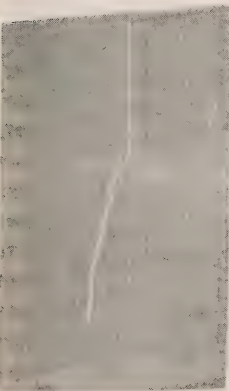
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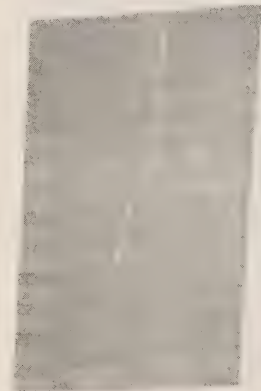
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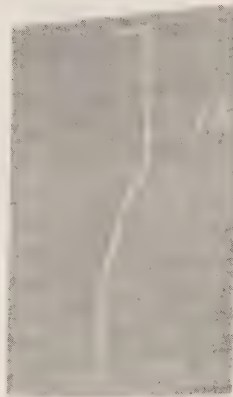
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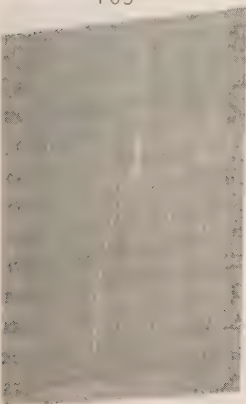
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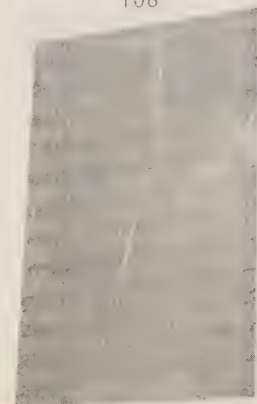
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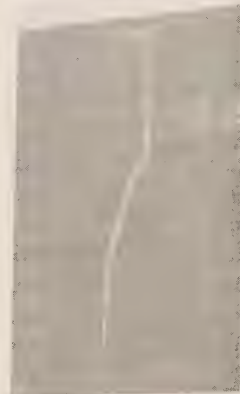
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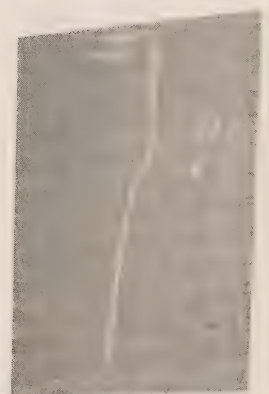
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110



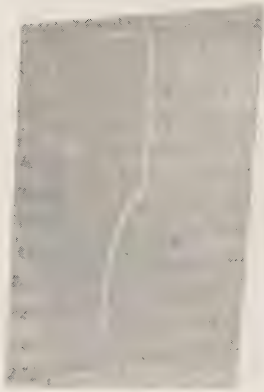
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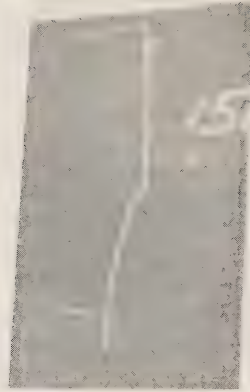
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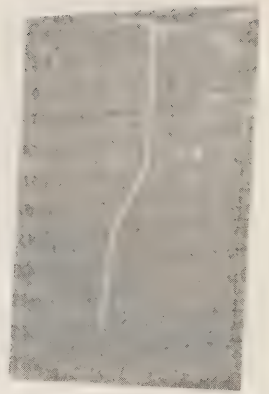
113



114



115



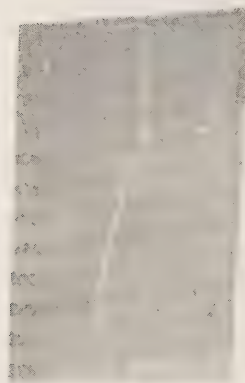
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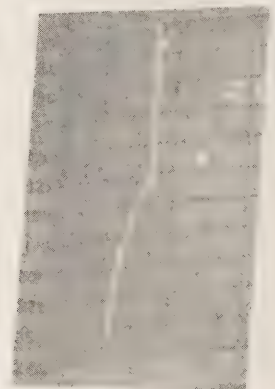
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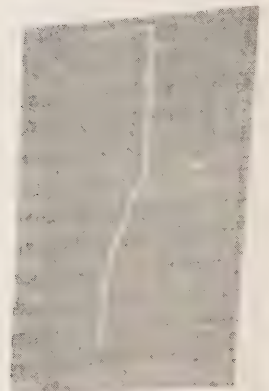
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123



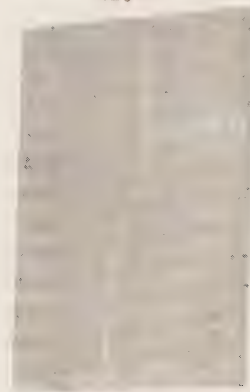
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125



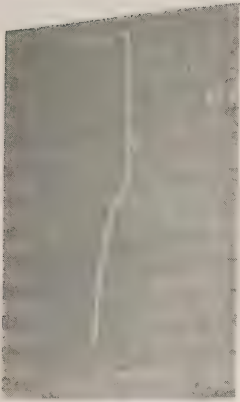
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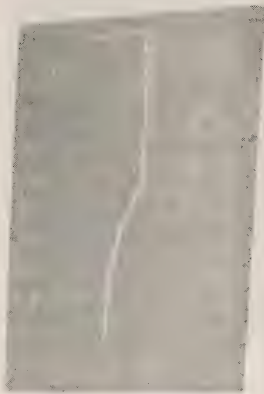
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128



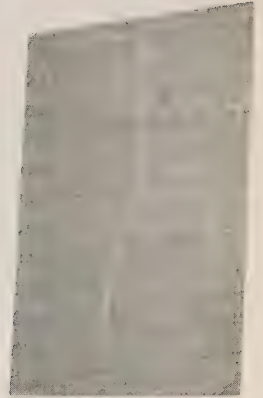
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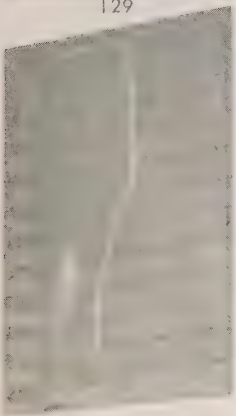
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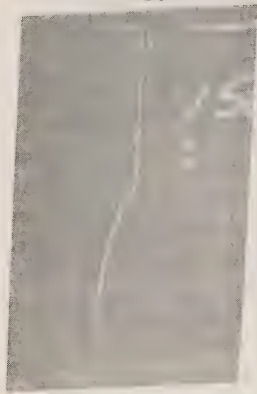
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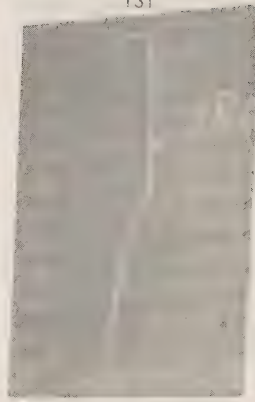
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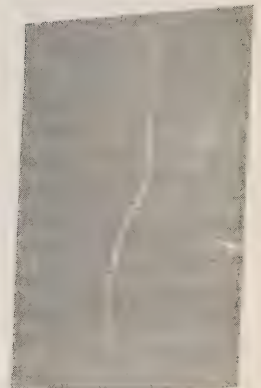
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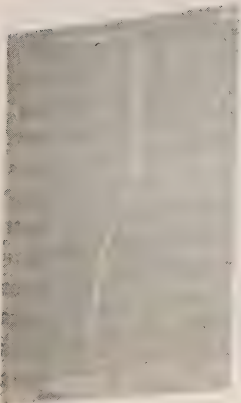
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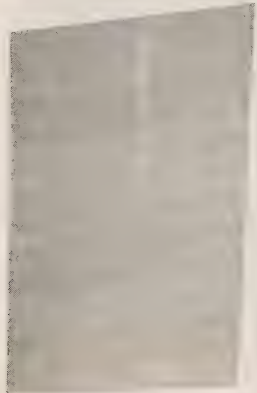
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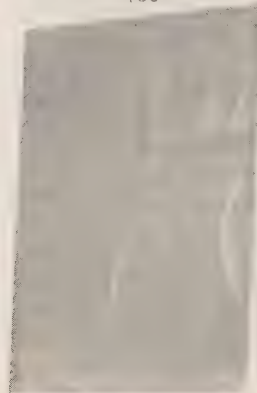
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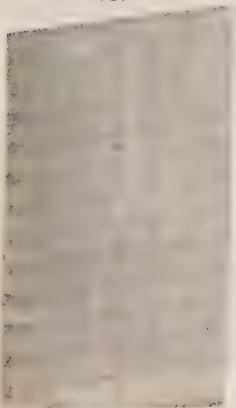
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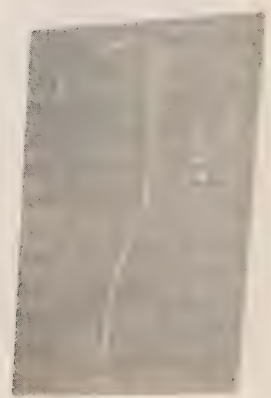
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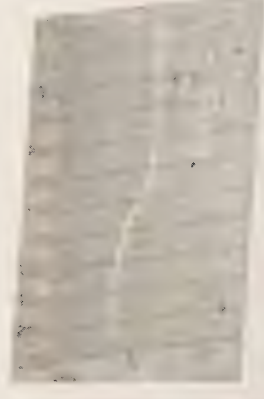
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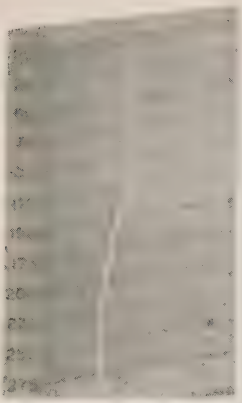
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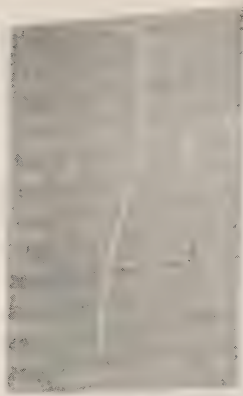
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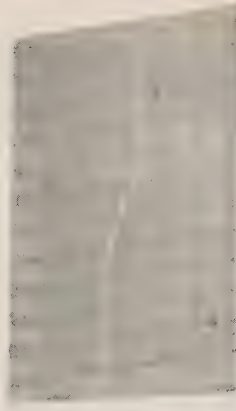
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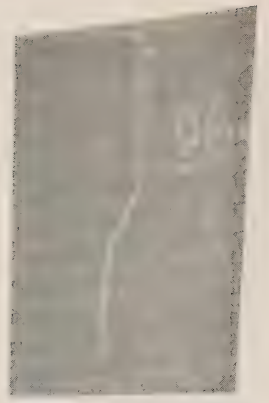
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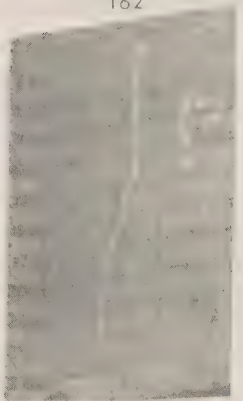
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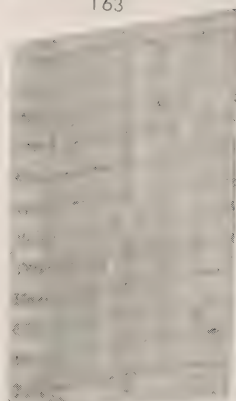
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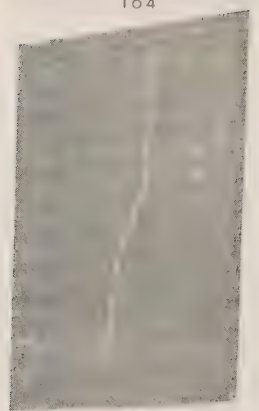
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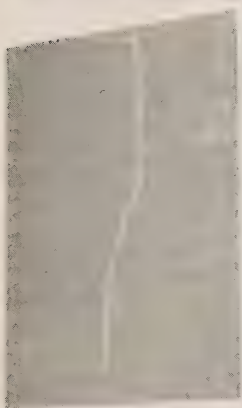
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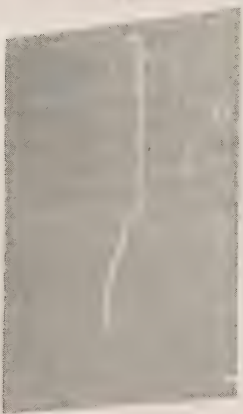
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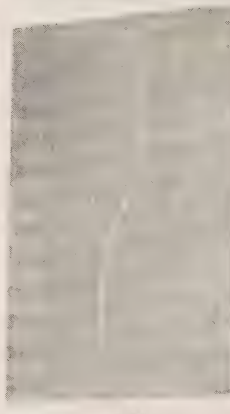
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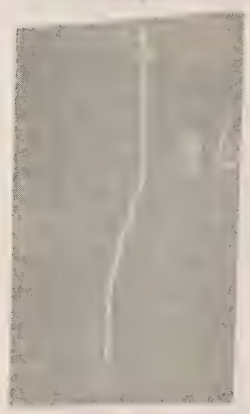
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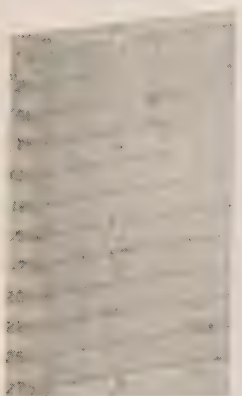
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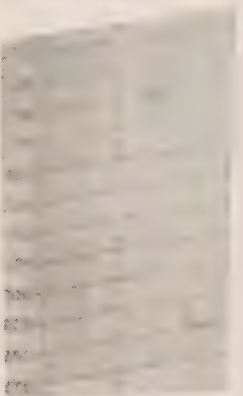
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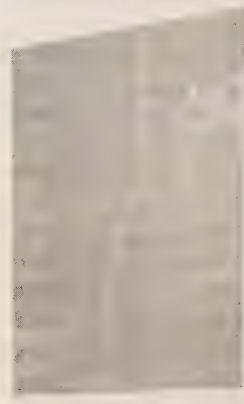
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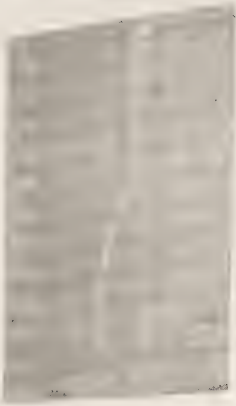
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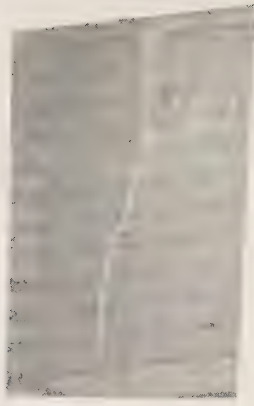
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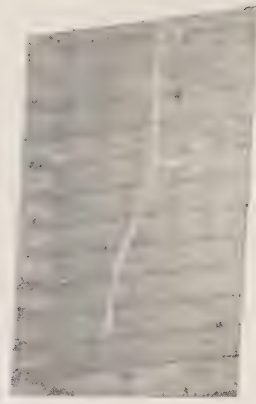
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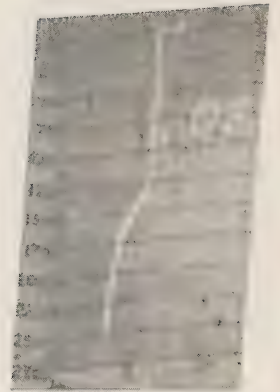
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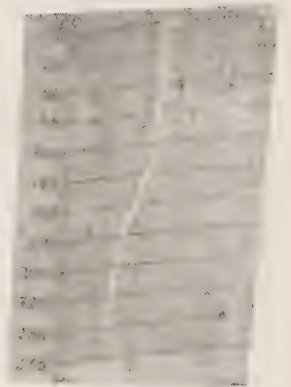
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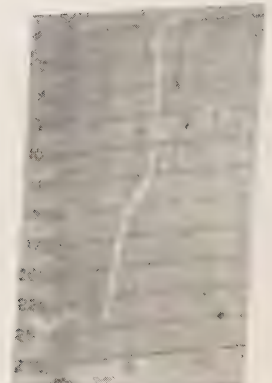
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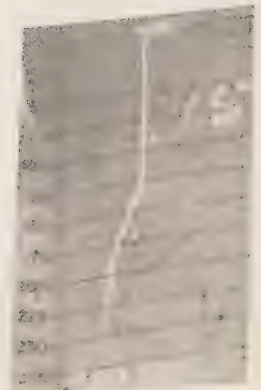
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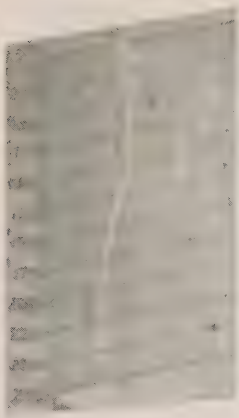
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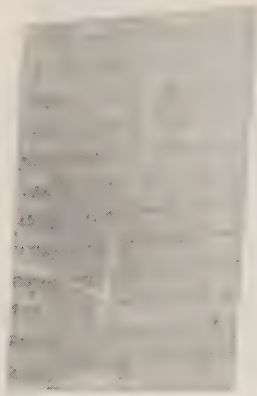
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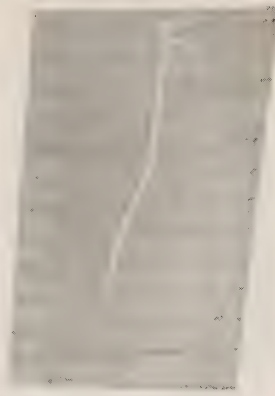
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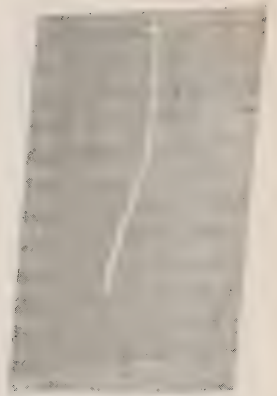
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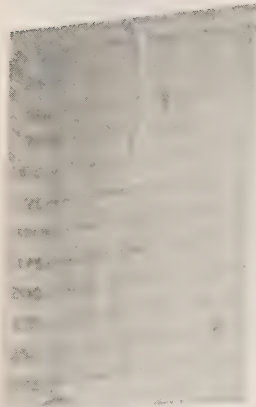
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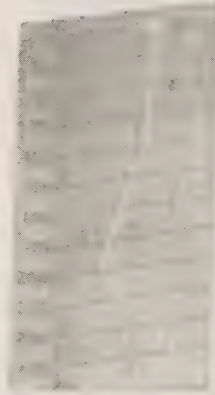
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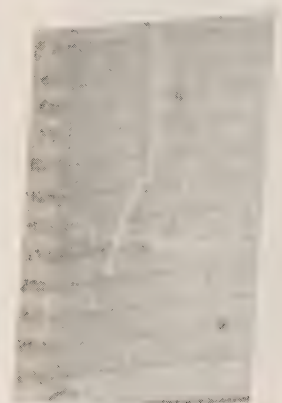
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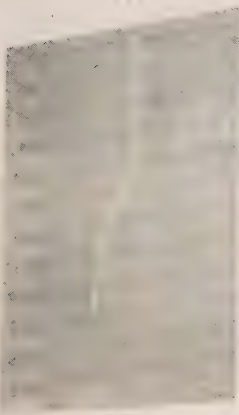
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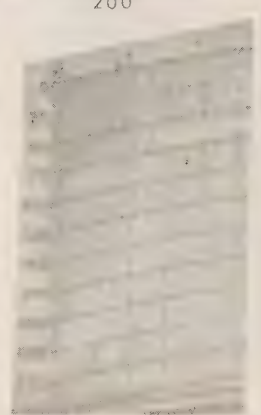
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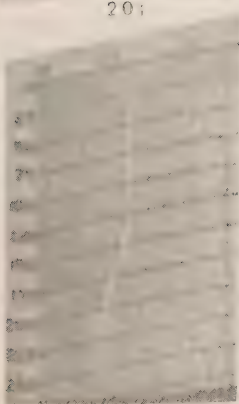
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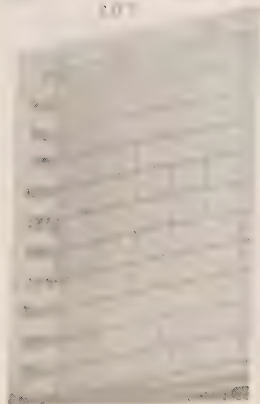
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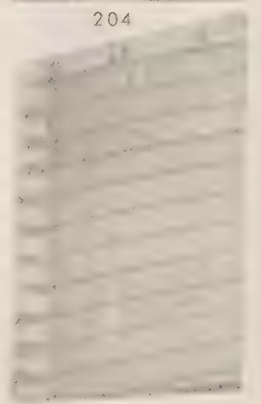
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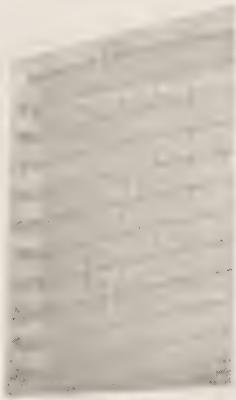
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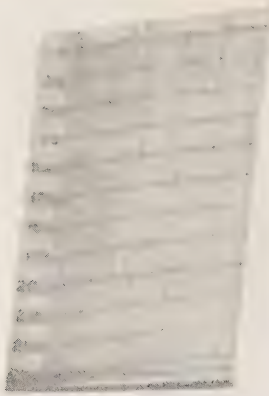
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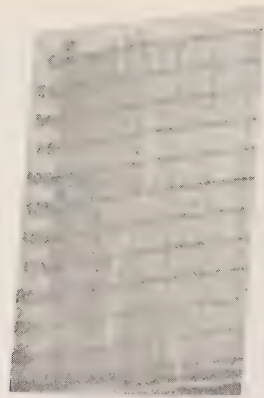
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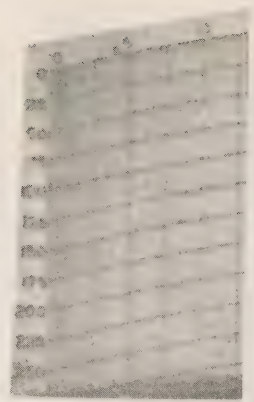
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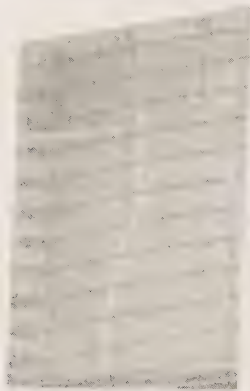
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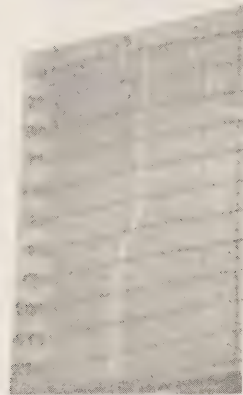
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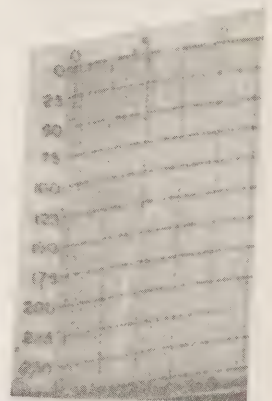
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214



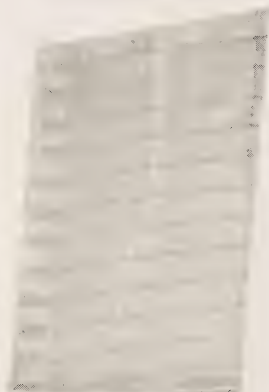
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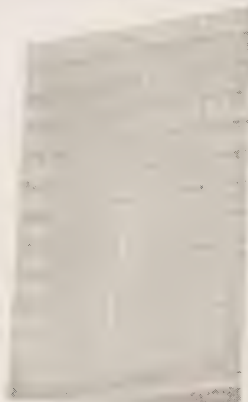
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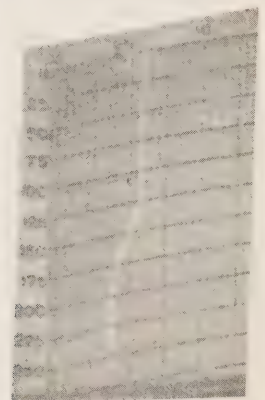
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218



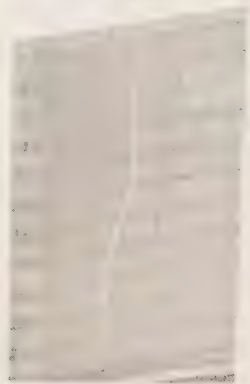
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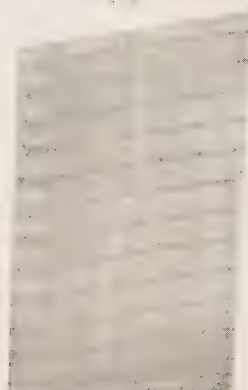
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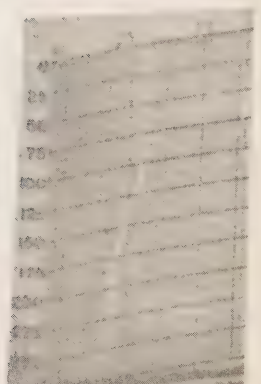
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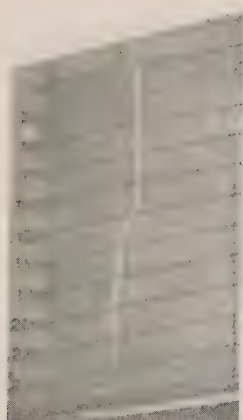
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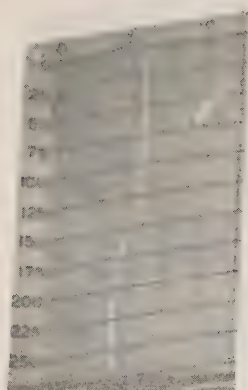
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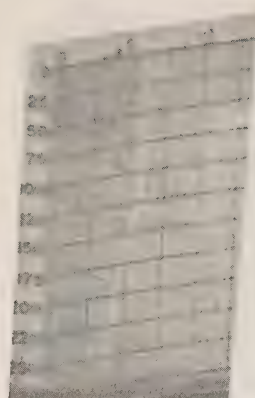
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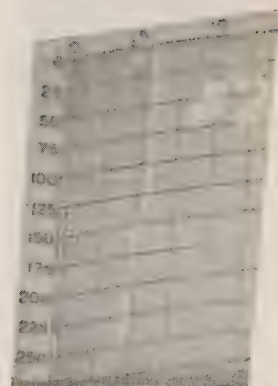
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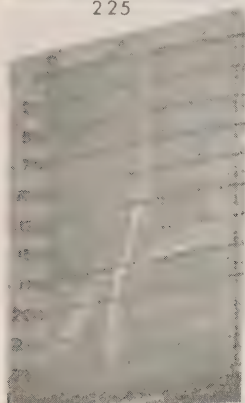
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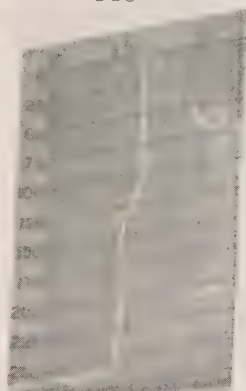
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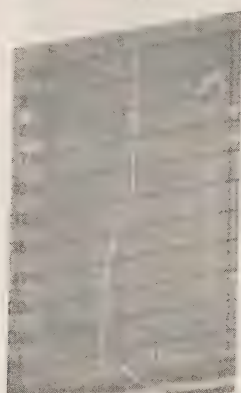
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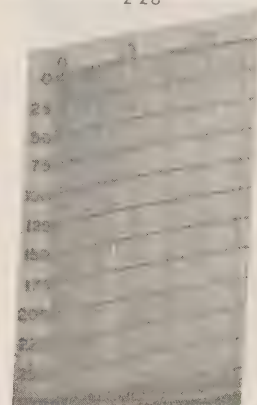
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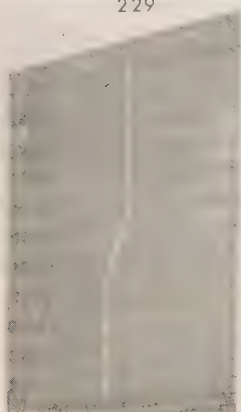
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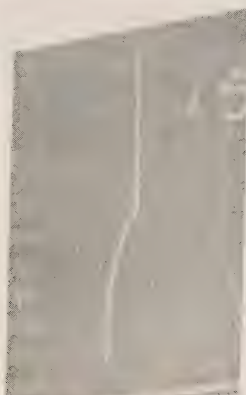
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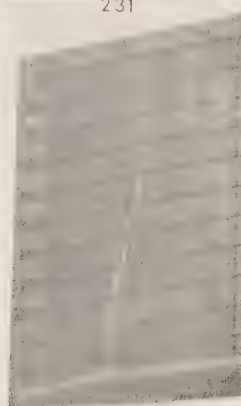
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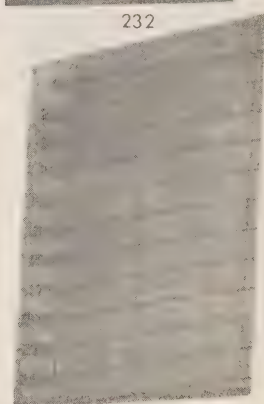
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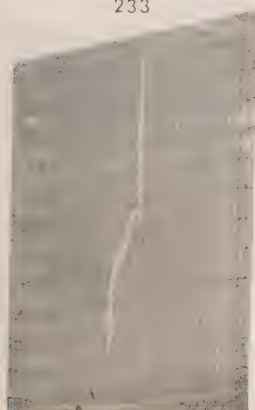
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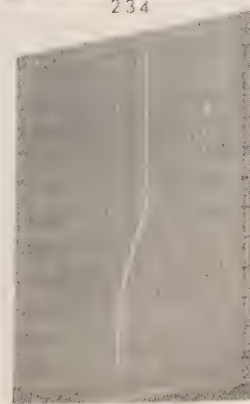
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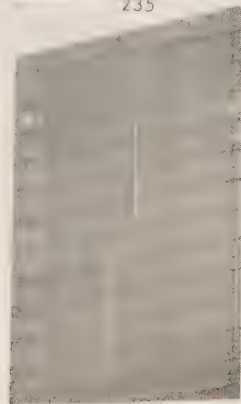
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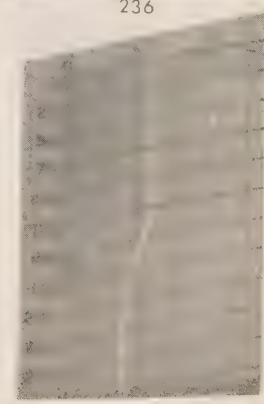
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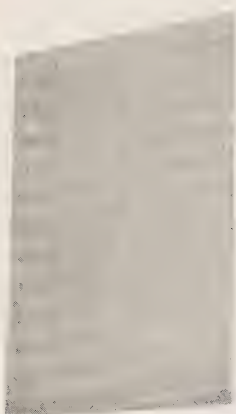
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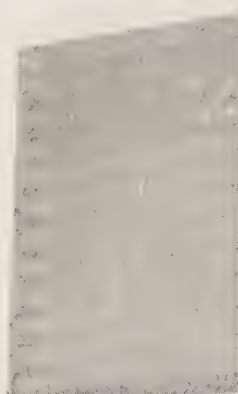
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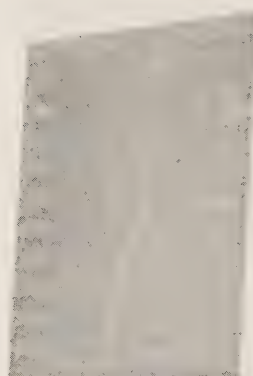
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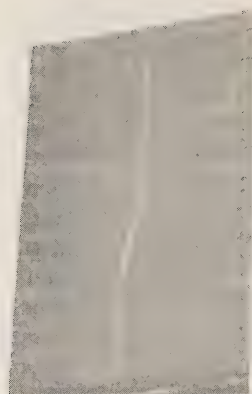
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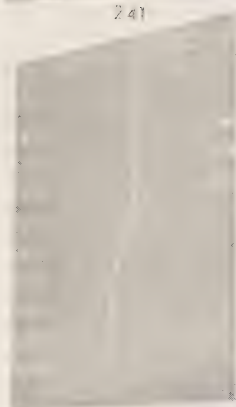
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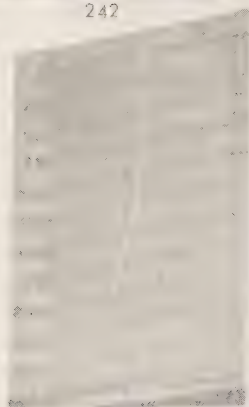
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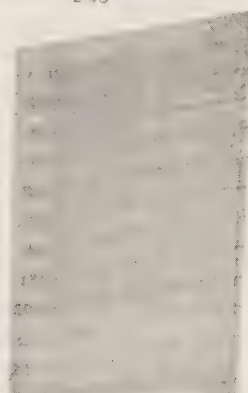
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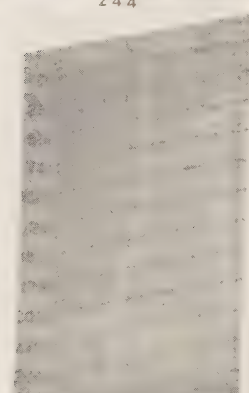
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246



247



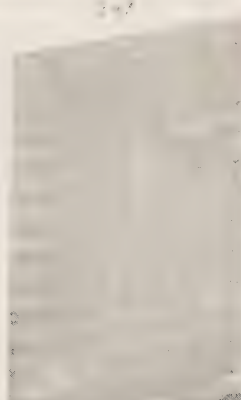
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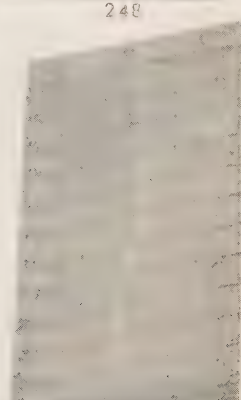
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250



251



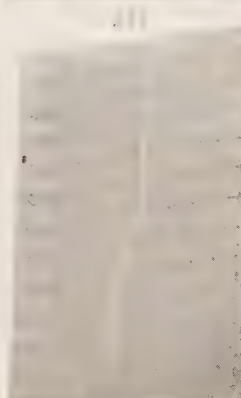
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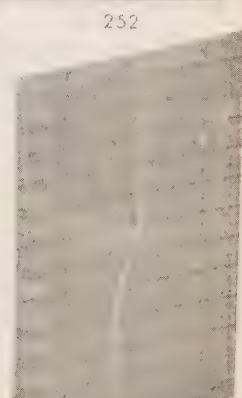
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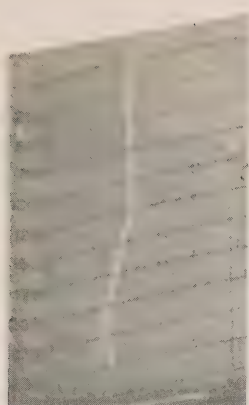
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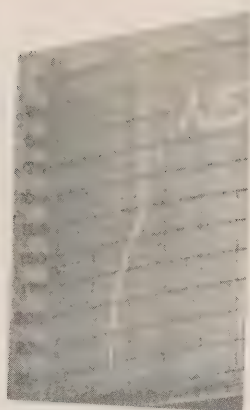
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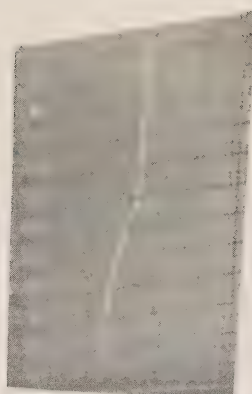
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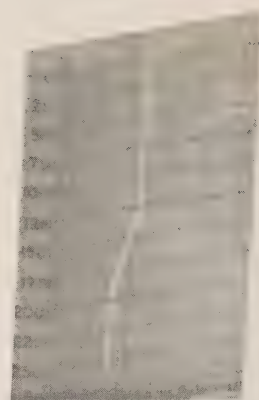
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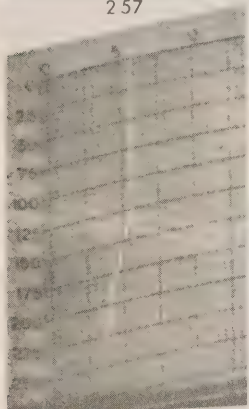
258



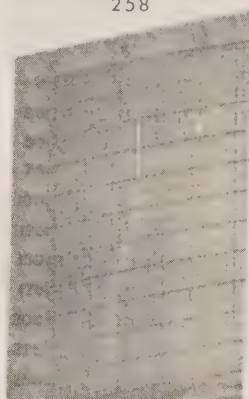
259



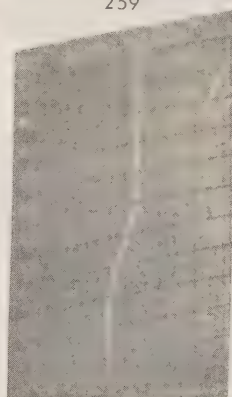
260



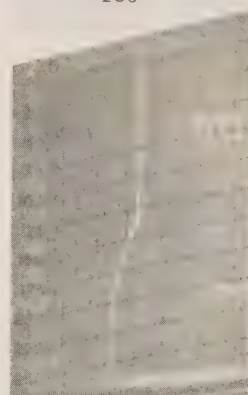
261



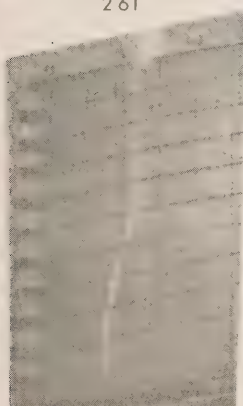
262



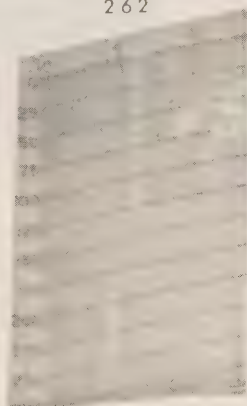
263



264



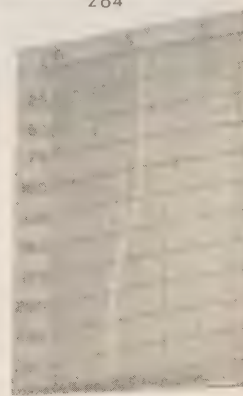
265



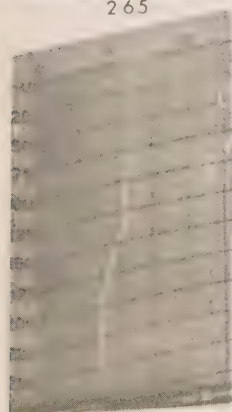
266



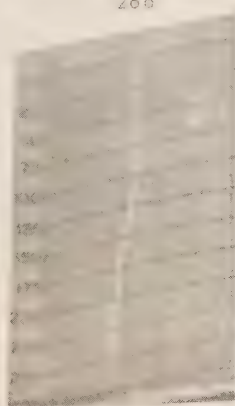
267



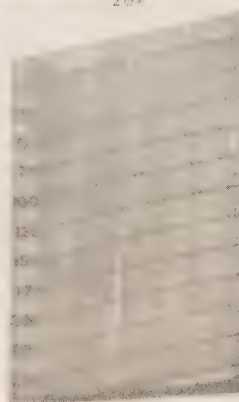
268



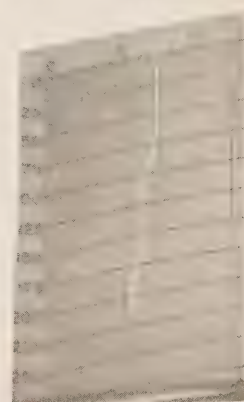
269



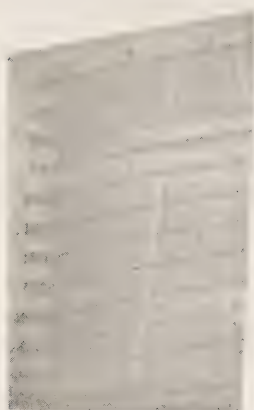
270



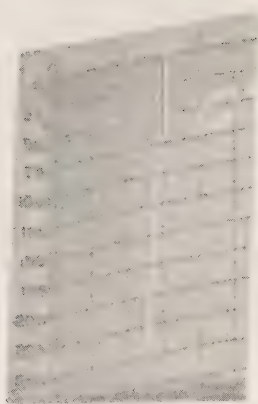
271



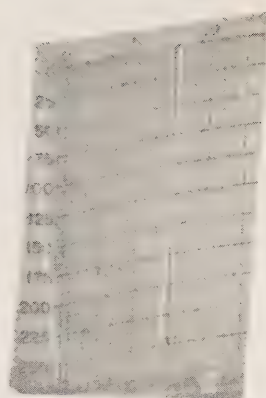
272



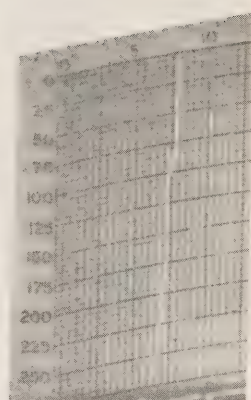
273



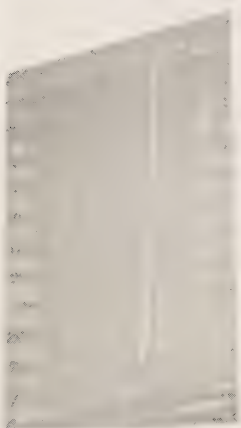
274



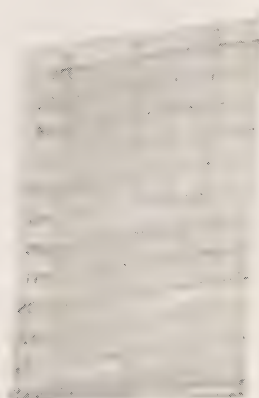
275



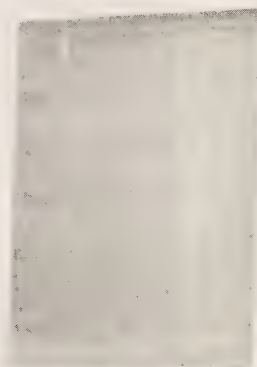
276



277



278



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CCGS "STONETOWN" Patrol No. 68

BATHYTHERMOGRAMS

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W - I		W - II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	I	A
001	48	33	125	32	22	01	66	00	10	0000		03	05	34	34	6	9		
002	48	38	126	00	22	01	66	02	12	0000		61	05	65	65	7	9		
003	48	42	126	42	22	01	66	04	40	1300		60	05	65	65	X	9		
004	48	42	127	42	22	01	66	07	30	2500		01	03	65	65	X	5		
005	48	50	128	40	22	01	66	11	00	2529		02	07	65	65	X	9		
006	48	54	129	40	22	01	66	14	36	2601		53	05	65	65	7	9		
007	48	54	130	40	22	01	66	17	40	2930		58	05	65	65	5	9		
008	49	00	131	40	22	01	66	21	00	2875	01	03	06	65	65	5	8		
009	49	06	132	40	23	01	66	00	00	3275	-98	03	08	65	65	2	5		
010	49	06	133	40	23	01	66	03	30	3200	-98	54	54	67	67	7	@		
011	49	12	134	40	23	01	66	07	00	3550		02	04	65	65	X	9		
012	49	15	135	40	23	01	66	10	00	3200		10	03	65	65	X	9		
013	49	24	136	40	23	01	66	15	00	3775	02	45	04	65	65	X	9		
014	49	28	137	40	23	01	66	17	40	3850		03	02	XX	XX	X	6		
015	49	30	138	40	23	01	66	20	40	3890		03	02	42	45	X	8		
016	49	35	139	40	24	01	66	00	30	3840		53	02	42	45	7	8		
017	49	56	143	40	24	01	66	16	05	0000		53	15	42	45	7	8		
018	50	08	145	29	27	01	66	18	00	4221	-89	61	14	25	2X	6	7		
019	50	09	145	29	27	01	66	21	00	4221	-90	02	09	23	25	6	8		
020	50	04	145	11	28	01	66	00	00	4221	-88	51	18	24	2X	7	8		
021	50	02	145	27	28	01	66	03	00	4221	-88	02	14	23	2	6	8		
022	50	01	145	17	28	01	66	06	00	4221	-89	61	18	2X	2X	6	8		
023	50	00	145	00	28	01	66	09	00	4221	-90	61	03	2X	2X	6	8		
024	49	48	145	00	28	01	66	12	00	4221	-90	21	13	2X	2X	6	8		
025	49	58	144	57	28	01	66	15	00	4221	-89	61	16	2X	2X	6	8		
026	49	55	144	55	28	01	66	18	00	4221	-90	61	21	25	2X	4	8		
027	49	52	144	56	28	01	66	21	00	4221	-92	61	22	25	26	4	8		
028	49	56	144	59	29	01	66	00	00	4221	-94	21	31	26	2X	6	7		
029	50	02	145	02	29	01	66	03	00	4221	-96	02	28	25	2X	6	8		
030	50	08	145	01	29	01	66	06	00	4221									

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	I	A
031	49	56	145	03	29	01	66	09	00	4221	-98	02	22	2X		2X		6	8
032	49	52	145	02	29	01	66	12	00	4221	00	02	30	2X		2X		6	5
033	49	54	144	52	29	01	66	15	00	4221	00	81	24	2X		2X		6	8
034	50	03	144	49	29	01	66	18	00	4221	01	02	24	24		25		6	7
035	50	10	144	47	29	01	66	21	00	4221	03	80	20	24		23		8	7
036	50	11	144	48	30	01	66	00	00	4221	03	02	19	24		23		6	6
037	50	03	144	57	30	01	66	03	00	4221	04	02	06	23		23		8	6
038	50	00	145	02	30	01	66	06	00	4221	03	02	06	2X		2X		6	3
039	49	55	145	03	30	01	66	09	00	4221	02	02	06	2X		2X		6	4
041	50	00	145	05	30	01	66	15	00	4221	-96	02	22	2X		2X		6	8
042	49	55	145	05	30	01	66	18	00	4221	-92	61	31	26		2X		7	8
043	49	51	145	01	30	01	66	21	00	4221	-90	61	18	24		25		7	8
044	49	59	145	00	31	01	66	00	00	4221	-89	02	25	24		24		6	8
045	49	58	145	06	31	01	66	03	00	4221	-91	02	30	26		2X		6	7
046	49	58	145	25	31	01	66	06	00	4221	-93	02	26	2X		2X		6	5
047	49	57	145	07	31	01	66	09	00	4221	-95	02	23	2X		2X		6	3
048	49	58	144	56	31	01	66	12	00	4221	-97	02	29	2X		2X		6	2
049	50	00	145	02	31	01	66	15	00	4221	-99	89	26	2X		2X		9	7
050	50	00	145	06	31	01	66	18	00	4221	01	15	20	25		24		8	5
051	50	00	145	04	31	01	66	21	00	4221	03	27	14	25		24		9	4
052	50	00	145	10	01	02	66	00	00	4221	03	15	17	24		24		8	3
053	50	03	144	57	01	02	66	03	00	4221	05	15	06	21		24		8	3
054	50	01	145	00	01	02	66	06	00	4221	07	02	14	2X		2X		8	2
055	50	03	144	55	01	02	66	09	00	4221	10	02	06	2X		2X		8	1
056	50	00	144	58	01	02	66	12	00	4221	11	02	12	2X		2X		8	1
057	50	02	144	58	01	02	66	15	00	4221	12	02	13	2X		2X		8	5
058	50	00	145	00	01	02	66	18	00	4221	15	16	03	20		23		9	5
059	50	00	144	52	01	02	66	21	00	4221	16	15	12	21		24		8	2
060	50	00	144	55	02	02	66	00	00	4221	17	15	14	22		24		8	6
061	49	58	144	52	02	02	66	03	00	4221	18	02	10	22		23		8	4

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Aml	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
062	49	57	144	50	02	02	66	06	00	4221	19	02	08	2X	2X	6	6		
063	49	56	144	49	02	02	66	09	00	4221	20	02	14	2X	2X	6	2		
064	49	58	144	59	02	02	66	12	00	4221	20	02	04	2X	2X	6	6		
065	49	57	144	58	02	02	66	15	00	4221	20	02	04	2X	2X	6	4		
066	49	58	144	52	02	02	66	18	00	4221	20	02	07	22	23	7	6		
067	49	56	144	51	02	02	66	21	00	4221	20	02	05	22	22	8	7		
068	49	59	144	58	03	02	66	00	00	4221	19	02	12	20	22	8	8		
069	49	59	144	56	03	02	66	03	00	4221	19	02	08	20	23	8	8		
070	49	57	144	54	03	02	66	06	00	4221	18	02	07	2X	2X	6	7		
071	49	56	144	52	03	02	66	09	00	4221	17	02	00	2X	2X	6	8		
072	49	57	145	00	03	02	66	12	00	4221	17	02	08	2X	2X	6	7		
073	49	58	145	00	03	02	66	15	00	4221	16	02	06	2X	2X	6	8		
074	49	56	144	59	03	02	66	18	00	4221	15	02	08	22	2X	6	8		
075	49	57	145	01	03	02	66	21	00	4221	15	02	10	22	2X	6	8		
076	49	57	145	00	04	02	66	00	00	4221	14	02	19	22	2X	6	8		
077	49	44	145	00	04	02	66	03	00	4221	14	61	18	23	2X	6	8		
078	49	56	145	08	04	02	66	06	00	4221	15	02	22	2X	2X	6	8		
079	49	54	145	06	04	02	66	09	00	4221	14	02	21	2X	2X	6	6		
080	49	55	145	04	04	02	66	12	00	4221	15	02	25	2X	2X	8	6		
081	50	01	145	01	04	02	66	15	00	4221	15	80	23	2X	2X	8	6		
082	50	02	145	03	04	02	66	18	00	4221	16	14	21	23	2X	6	8		
083	49	52	145	03	04	02	66	21	00	4221	17	02	24	24	23	6	6		
084	49	56	145	05	05	02	66	00	00	4221	17	02	25	24	22	8	7		
085	49	55	145	03	05	02	66	03	00	4221	19	02	17	24	2X	8	8		
086	49	58	145	04	05	02	66	06	00	4221	19	02	18	2X	2X	8	6		
087	49	59	145	00	05	02	66	09	00	4221	19	02	09	2X	2X	6	7		
088	49	56	144	54	05	02	66	12	00	4221	20	02	08	2X	2X	6	6		
089	49	58	144	50	05	02	66	15	00	4221	19	80	12	2X	2X	6	8		
090	49	57	144	55	05	02	66	18	00	4221	18	02	14	23	22	6	5		
091	49	58	144	59	05	02	66	21	00	4221	18	02	16	22	23	6	8		

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	W W Code	WIND Amt	W-T		W-T		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
092	50	03	144	58	06	02	66	00	00	4221	19	02	38	23	2X			6	4
093	50	01	144	52	06	02	66	03	00	4221	20	02	23	25	24			6	3
094	49	58	144	55	06	02	66	06	00	4221	20	02	26	2X	2X			6	8
095	49	59	144	56	06	02	66	09	00	4221	19	03	24	2X	2X			6	7
096	50	04	144	57	06	02	66	12	00	4221	16	03	25	2X	2X			6	8
097	49	59	144	59	06	02	66	15	00	4221	12	02	34	2X	2X			6	8
098	50	05	145	07	10	02	66	03	00	4221	13	02	08	21	24			7	8
099	50	03	145	04	10	02	66	06	00	4221	14	02	07	2X	2X			6	8
100	50	06	145	02	10	02	66	09	00	4221	16	02	12	2X	2X			6	8
101	50	07	145	00	10	02	66	12	00	4221	16	02	21	2X	2X			0	5
102	50	03	144	55	10	02	66	15	00	4221	17	02	24	2X	2X			6	5
103	50	03	144	50	10	02	66	18	00	4221	20	02	18	27	2X			8	3
104	49	58	144	49	10	02	66	21	00	4221	22	02	22	27	2X			8	2
105	49	59	144	55	11	02	66	18	00	4221	33	02	10	20	24			6	7
106	49	54	144	47	11	02	66	21	00	4221	34	02	09	22	24			6	6
107	49	53	144	50	12	02	66	00	00	4221	33	03	12	22	23			6	6
108	49	48	144	55	12	02	66	03	00	4221	34	02	17	23	23			6	8
109	49	57	145	01	12	02	66	06	00	4221	36	02	22	2X	2X			6	8
110	50	03	145	02	12	02	66	09	00	4221	36	02	21	2X	2X			6	8
111	50	03	144	46	12	02	66	15	00	4221	34	02	36	2X	2X			6	8
112	50	06	145	04	13	02	66	18	00	4221	30	45	10	24	2X			8	9
113	50	04	145	05	13	02	66	21	00	4221	30	45	11	24	2X			8	9
114	50	04	145	04	14	02	66	00	00	4221	29	45	12	22	24			8	9
115	49	57	144	57	14	02	66	03	00	4221	28	02	12	22	23			7	8
116	49	58	144	58	14	02	66	06	00	4221	27	20	16	2X	2X			7	8
117	50	01	144	57	14	02	66	09	00	4221	26	10	17	2X	2X			7	8
118	50	05	145	01	14	02	66	12	00	4221	25	61	24	2X	2X			7	8
119	50	08	145	02	14	02	66	15	00	4221	24	10	21	2X	2X			7	8
120	50	08	145	02	14	02	66	18	00	4221	23	47	18	23	2X			8	9
121	50	03	144	57	14	02	66	21	00	4221	22	47	26	24	2X			8	9

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W-I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	I	A
122	50	04	144	54	15	02	66	00	00	4221	21	51	25	24	2X			7	8
123	50	00	145	00	15	02	66	03	00	4221	20	51	25	24	2X			7	8
124	49	54	145	03	15	02	66	06	00	4221	19	61	17	2X		2X		7	8
125	50	05	145	00	15	02	66	09	00	4221	20	61	14	2X		2X		7	8
126	50	07	144	56	15	02	66	12	00	4221	19	61	21	2X		2X		7	8
127	50	01	144	59	15	02	66	15	00	4221	19	61	20	2X		2X		7	8
128	49	56	145	03	15	02	66	18	00	4221	19	10	17	23		2X		7	8
129	49	58	145	03	15	02	66	21	00	4221	19	45	13	22		23		8	9
130	50	06	145	00	16	02	66	00	00	4221	17	61	18	22		23		4	8
131	49	59	144	45	16	02	66	03	00	4221	17	28	12	22		23		7	8
132	49	52	144	54	16	02	66	06	00	4221	16	51	17	2X		2X		7	8
133	49	57	145	00	16	02	66	09	00	4221	17	51	13	2X		2X		7	8
134	50	02	144	58	16	02	66	12	00	4221	18	51	04	2X		2X		7	8
135	50	04	145	00	16	02	66	15	00	4221	18	10	06	2X		2X		7	8
136	50	05	145	02	16	02	66	18	00	4221	20	47	04	20		24		8	9
137	50	05	145	03	16	02	66	21	00	4221	22	28	12	21		23		7	8
138	50	02	144	56	17	02	66	00	00	4221	22	10	19	23		2X		7	6
139	49	59	144	56	17	02	66	03	00	4221	22	10	14	23		2X		7	7
140	50	00	144	59	17	02	66	06	00	4221	24	10	16	2X		2X		7	8
141	50	02	145	00	17	02	66	09	00	4221	23	51	11	2X		2X		7	8
142	49	56	145	00	17	02	66	12	00	4221	22	02	08	2X		2X		6	8
143	50	02	144	59	17	02	66	15	00	4221	20	02	07	2X		2X		6	8
144	50	01	144	58	17	02	66	18	00	4221	20	02	04	20		23		6	7
145	50	00	144	58	17	02	66	21	00	4221	19	02	04	20		23		6	7
146	49	56	144	54	18	02	66	00	00	4221	16	02	00	20		22		6	8
147	49	56	144	55	18	02	66	03	00	4221	15	85	00	20		22		6	8
148	50	01	145	00	18	02	66	06	00	4221	13	02	03	2X		2X		6	8
149	50	01	145	00	18	02	66	09	00	4221	11	02	04	2X		2X		6	2
150	50	00	145	00	18	02	66	12	00	4221	10	02	02	2X		2X		6	2
151	50	01	144	55	18	02	66	15	00	4221	08	02	03	2X		2X		6	8

TABLE I

CON No	LAT		LONG		DATE			TIME		DEPTH Metres	BAR Mbs	WW Code	WIND Amt	W I		W-II		CLOUD	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min					P	H	P	H	T	A
152	50	02	144	52	18	02	66	18	00	4221	07	02	00	20	22	6	7		
153	50	02	144	51	18	02	66	21	00	4221	06	02	00	20	22	6	7		
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161	50	02	145	08	20	02	66	21	00	4221	-98	61	31	26	2X	6	8		
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179	49	57	144	52	23	02	66	06	00	4221	00	02	31	2X	2X	8	7		
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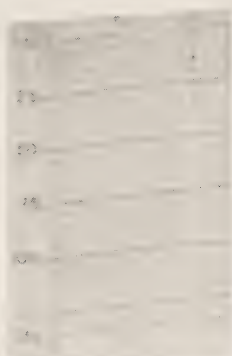
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193	50	04	145	23	25	02	66	09	00	4221	00	51	22	2X		2X		7	8	
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209	50	10	145	20	02	03	66	06	00	4221	23	80	18	2X		2X		6	8	
210	50	02	145	06	02	03	66	09	00	4221	21	02	16	2X		2X		6	8	
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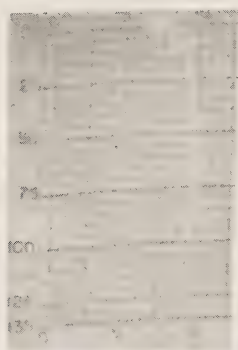
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218	50	00	145	04	04	03	66	06	00	4221	00	02	04	2X		2X		8	3
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229	50	02	145	06	05	03	66	15	00	4221	-90	61	24	2X		2X		4	8
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238	49	58	145	05	06	03	66	18	00	4221	00	83	16	24		25		8	8
239	50	03	145	10	06	03	66	21	00	4221	-99	02	07	24		23		8	6
240	50	05	145	03	07	03	66	00	00	4221	-97	02	09	23		23		8	6
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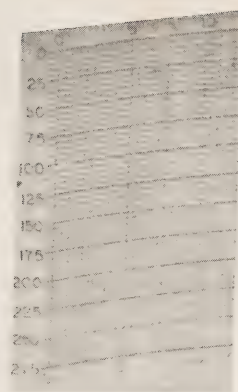
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248	49	18	134	40	08	03	66	13	30	3550	-88	02	30	XX	XX	9	6		
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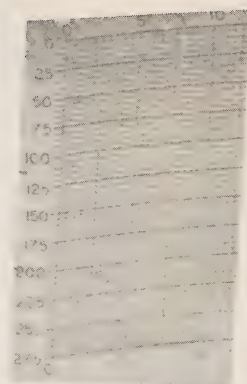
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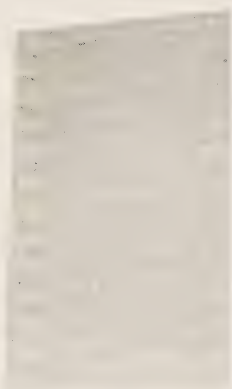
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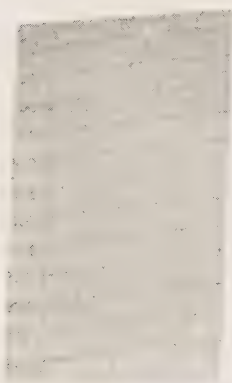
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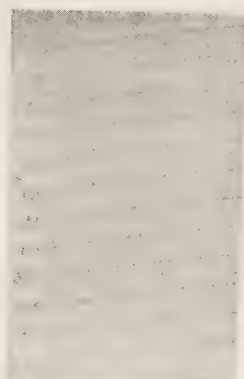
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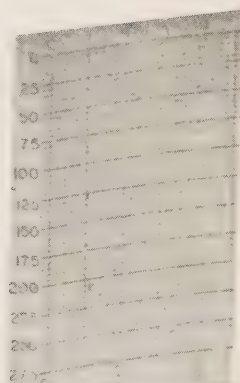
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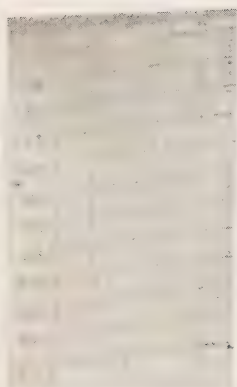
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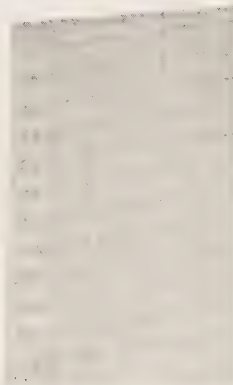
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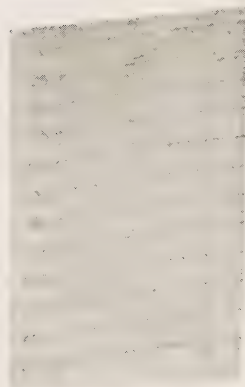
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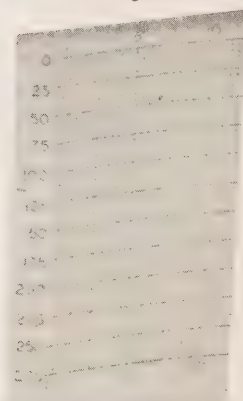
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10



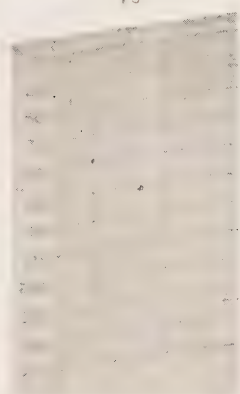
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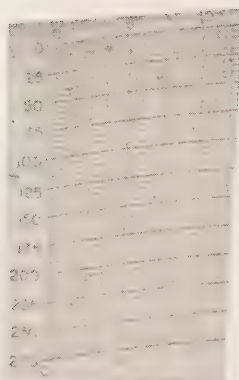
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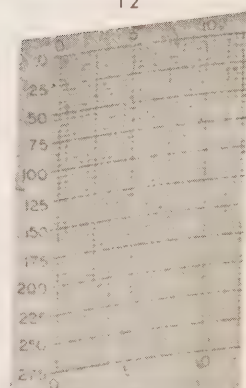
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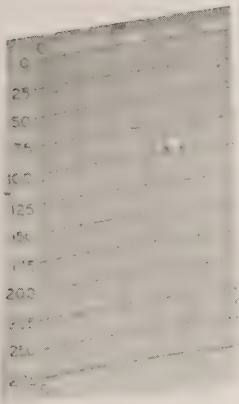
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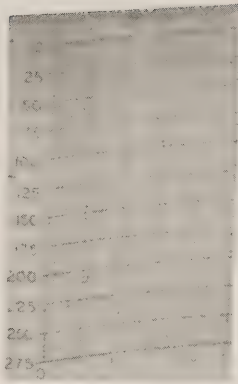
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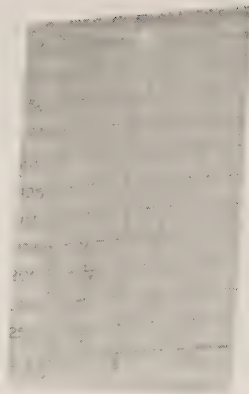
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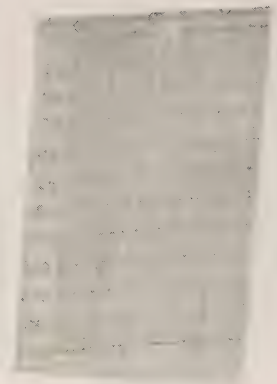
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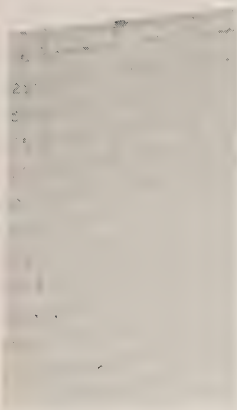
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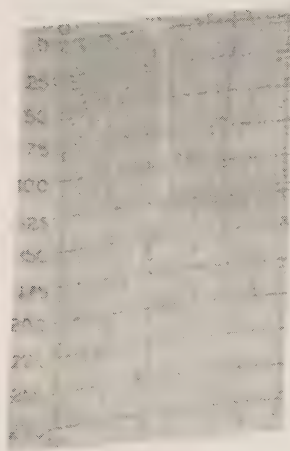
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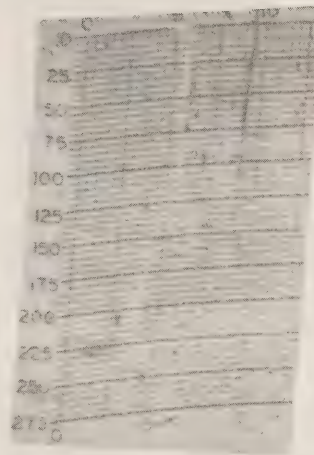
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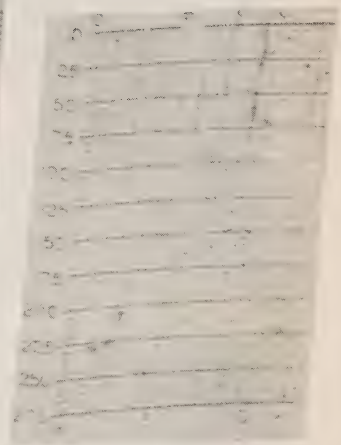
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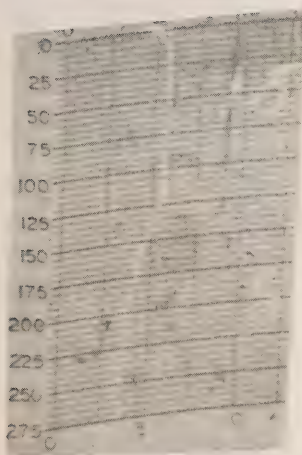
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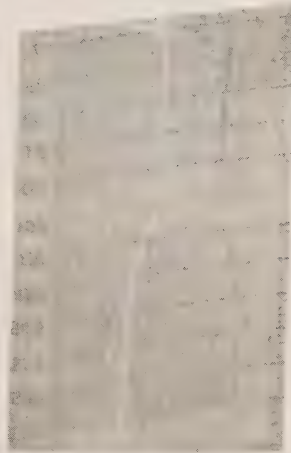
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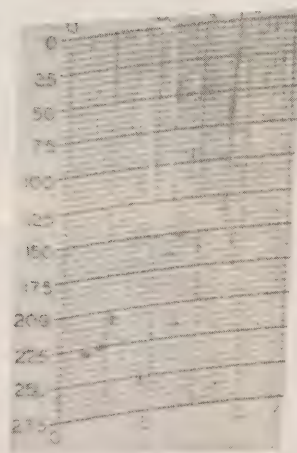
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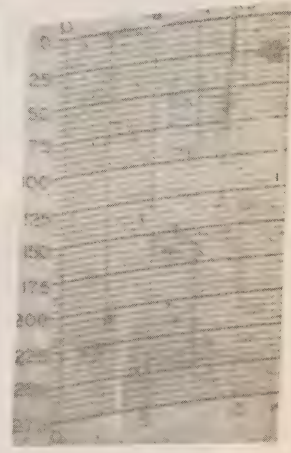
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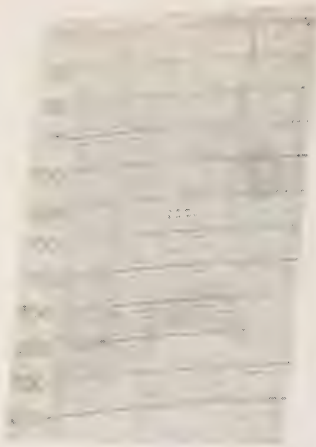
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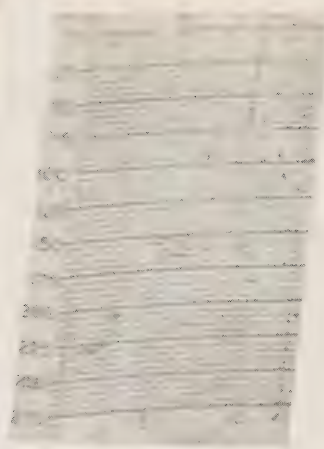
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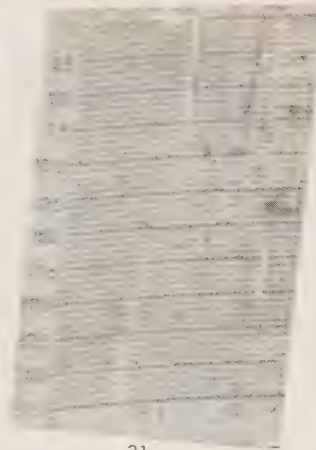
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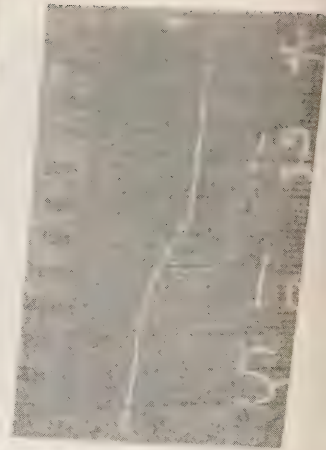
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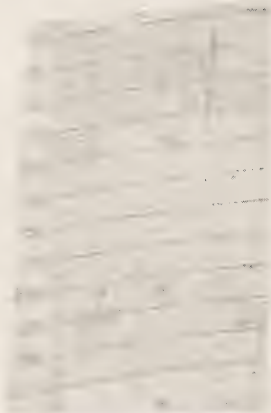
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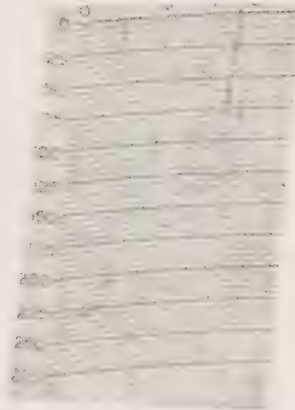
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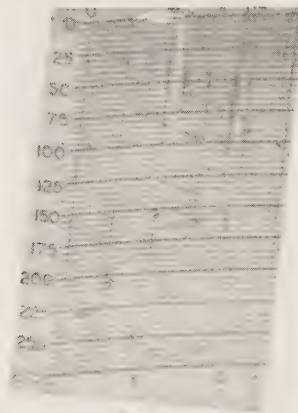
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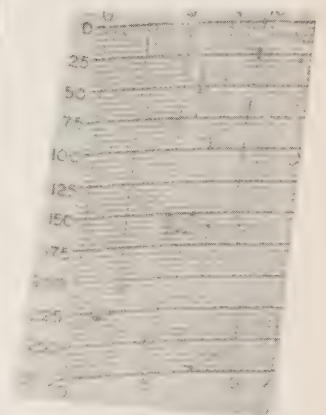
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34



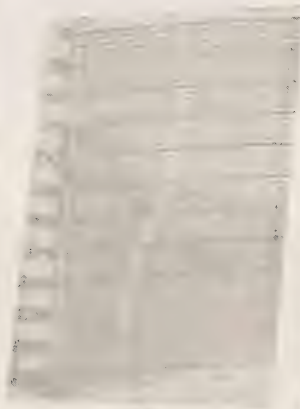
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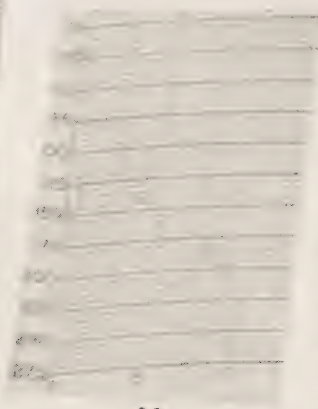
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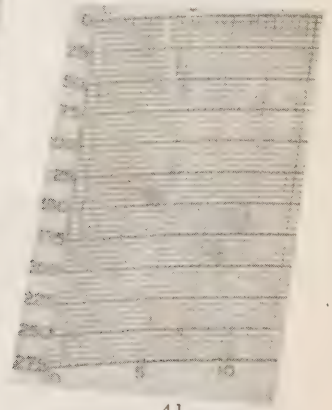
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38



39



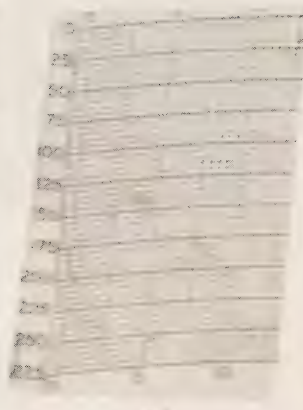
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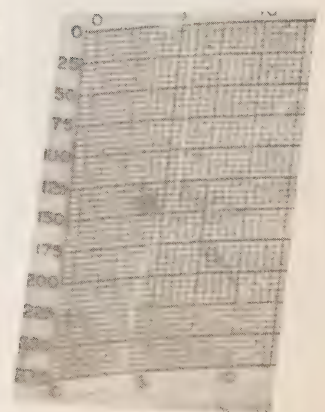
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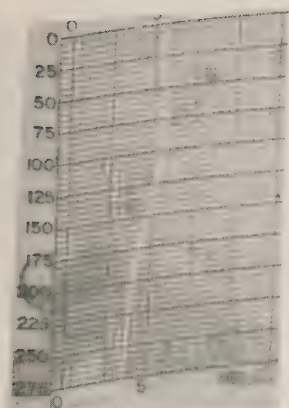
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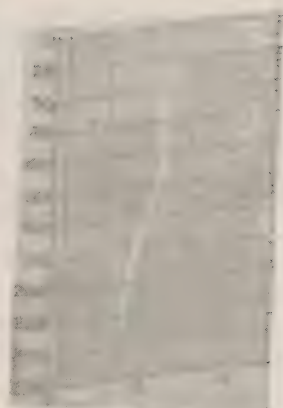
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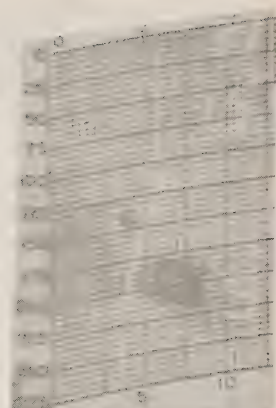
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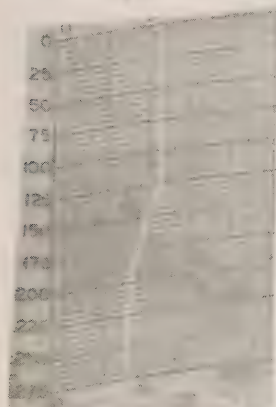
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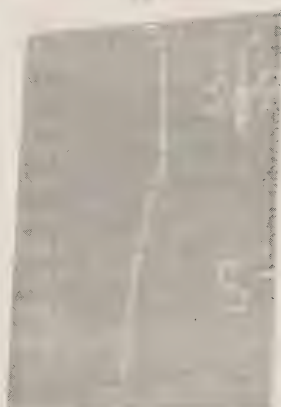
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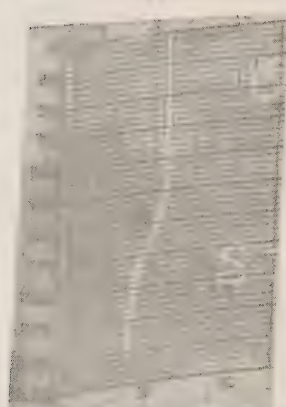
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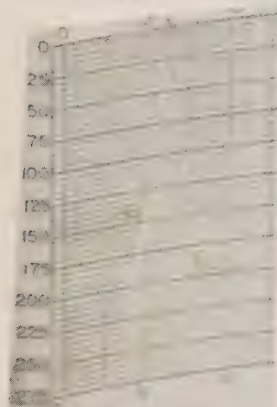
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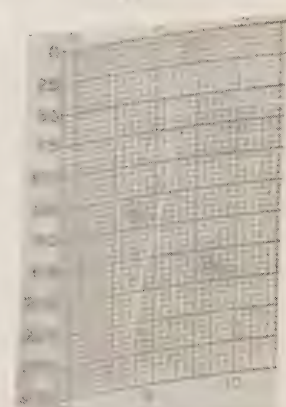
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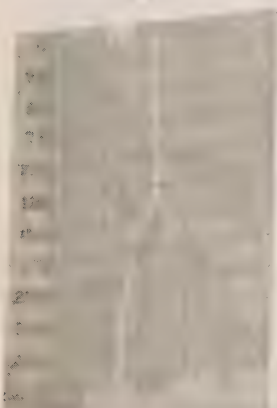
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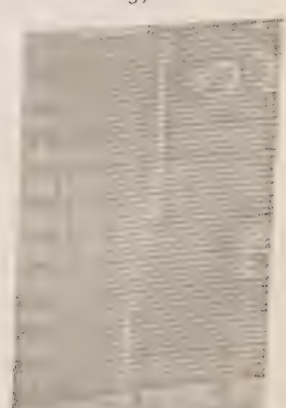
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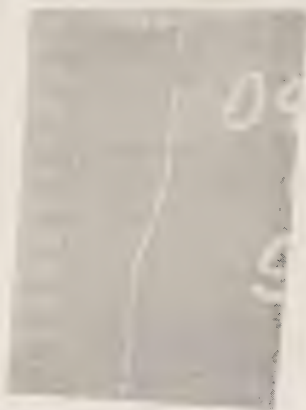
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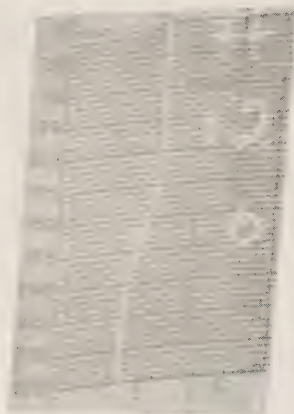
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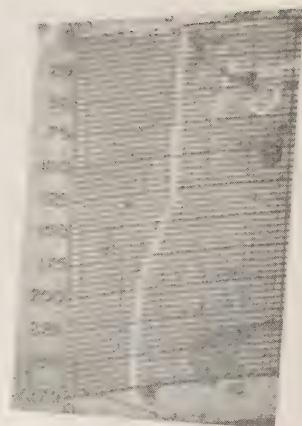
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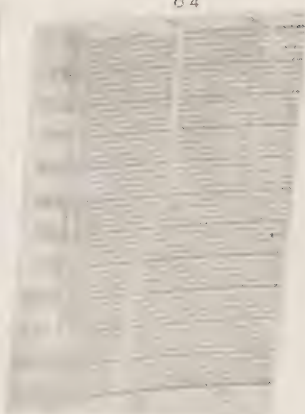
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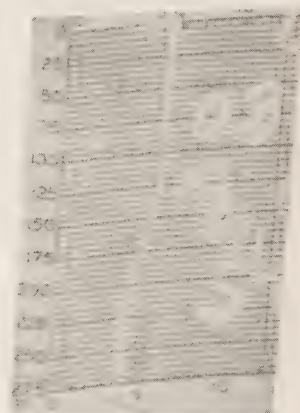
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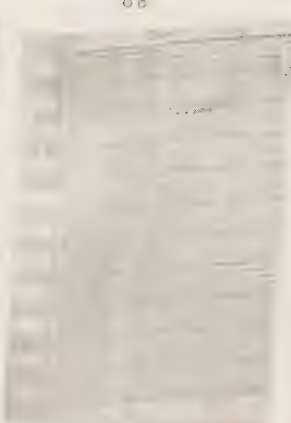
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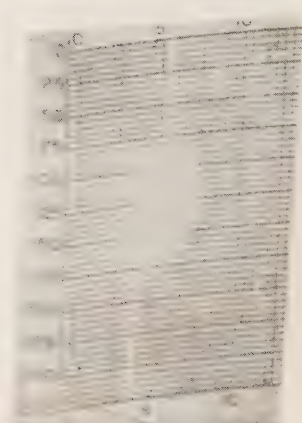
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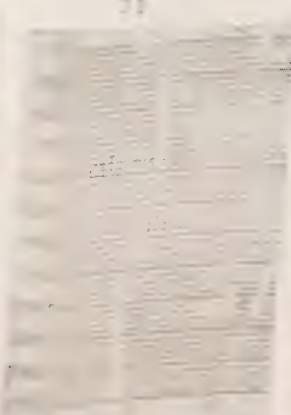
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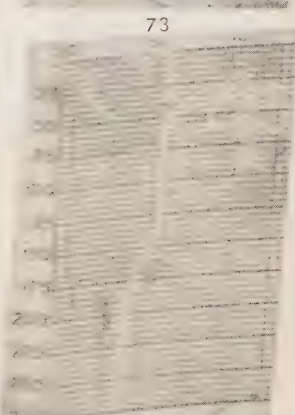
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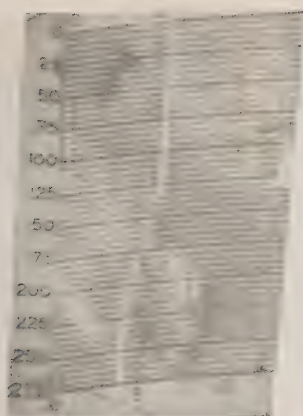
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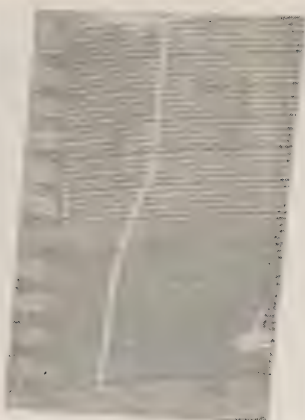
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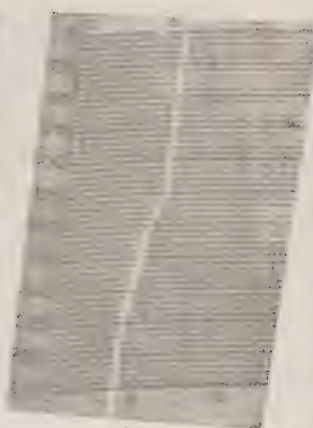
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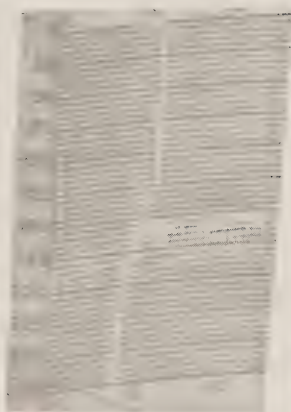
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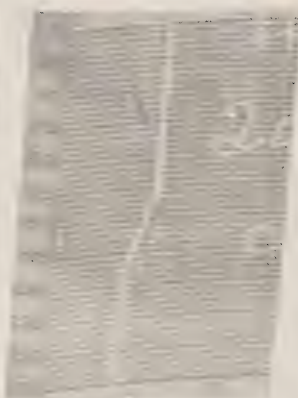
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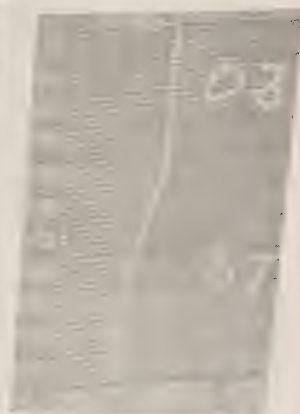
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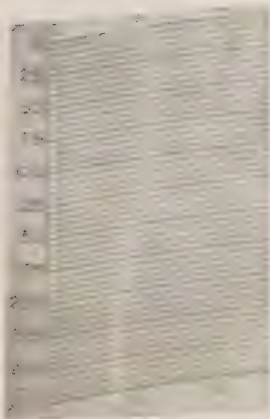
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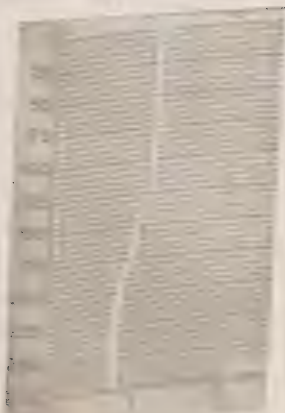
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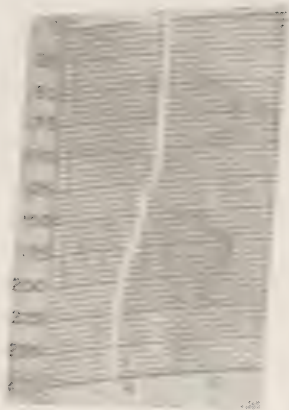
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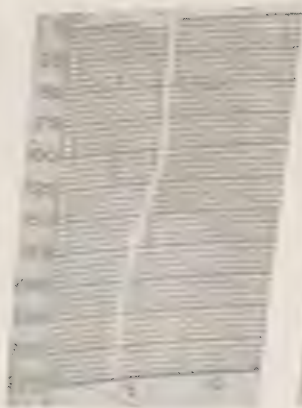
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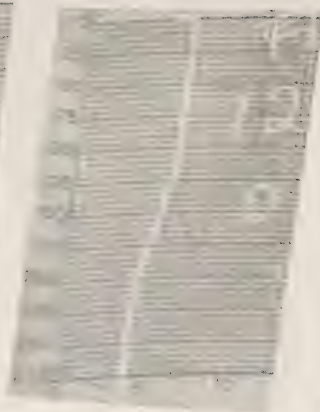
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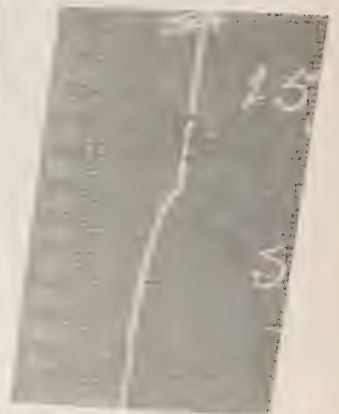
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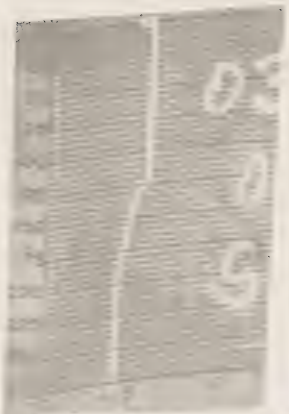
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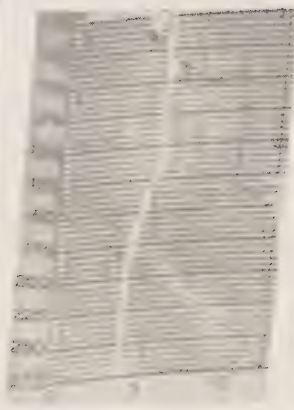
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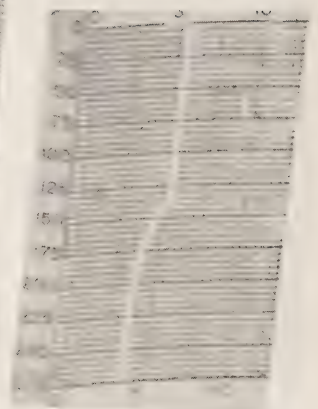
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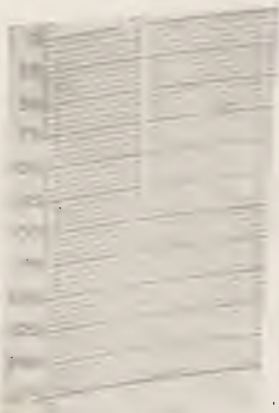
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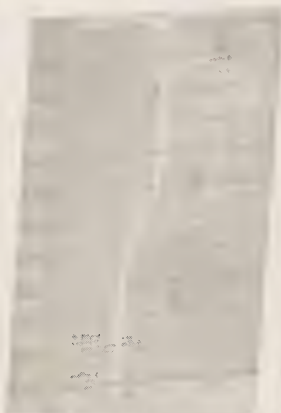
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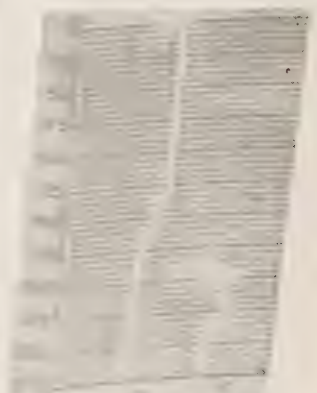
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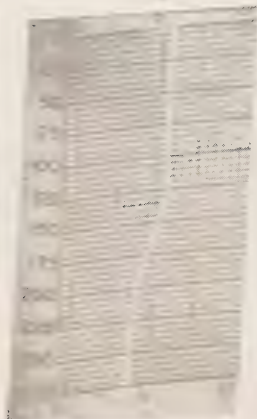
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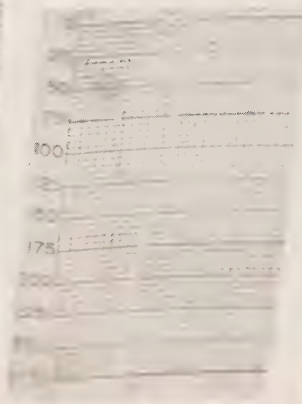
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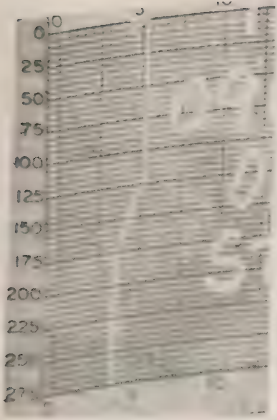
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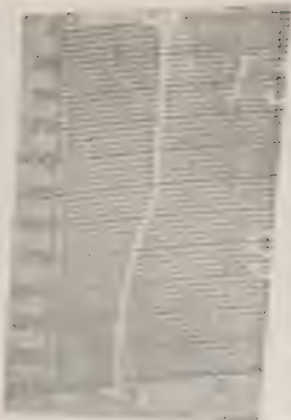
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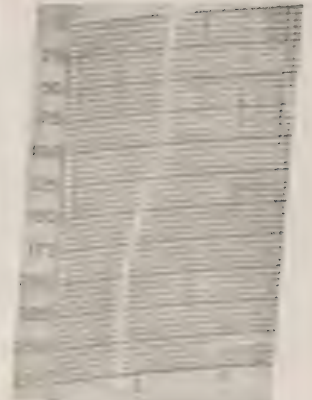
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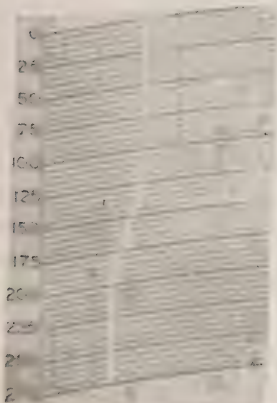
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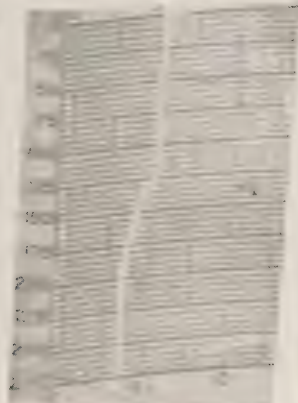
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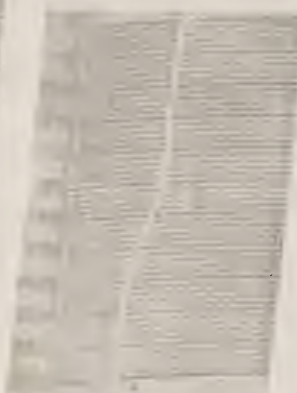
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117



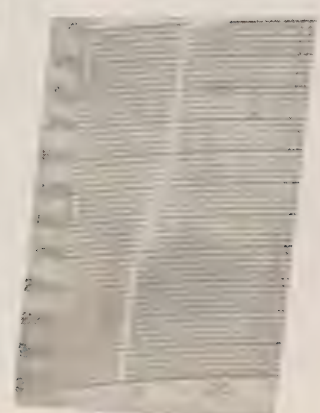
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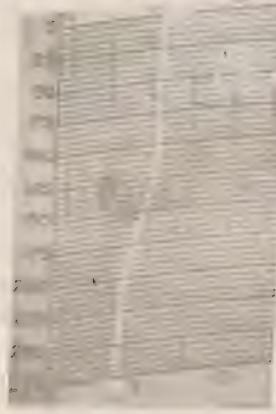
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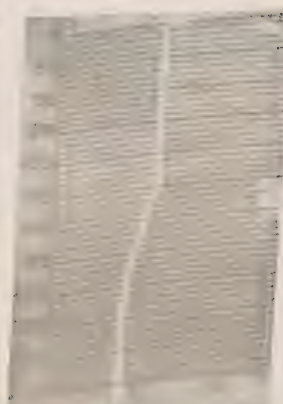
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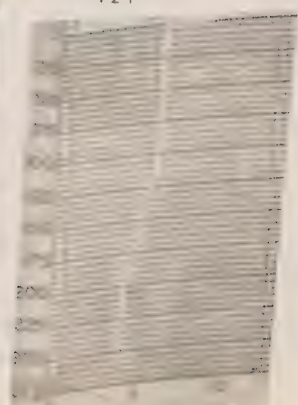
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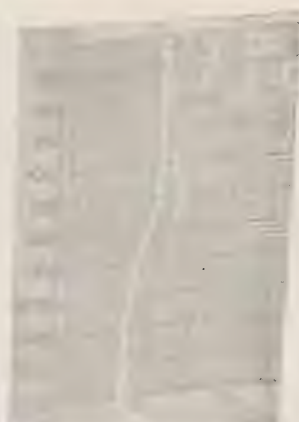
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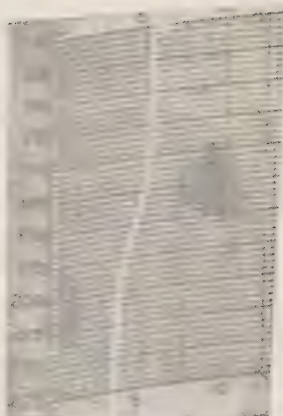
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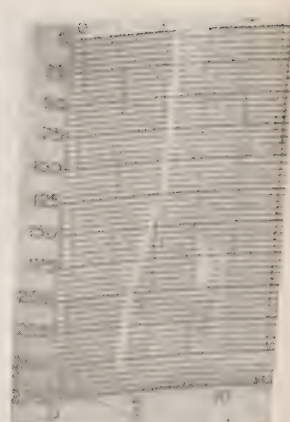
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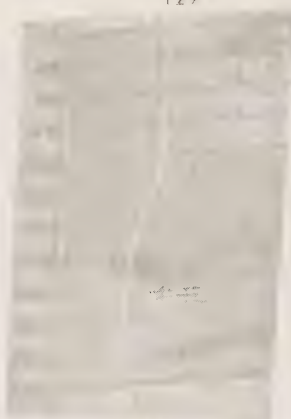
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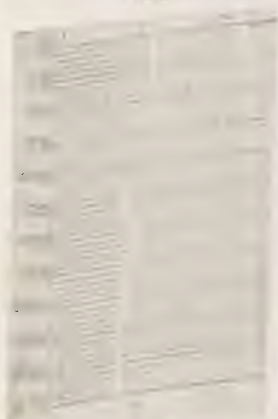
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137



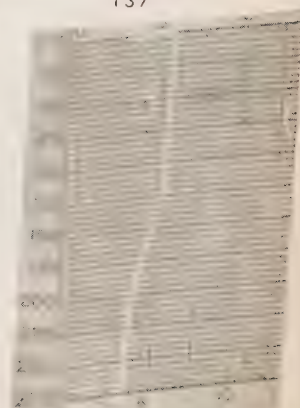
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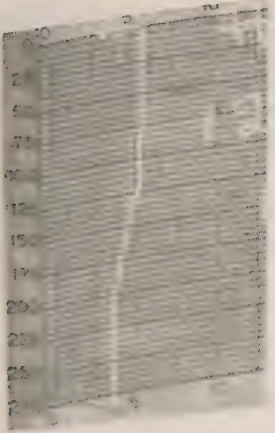
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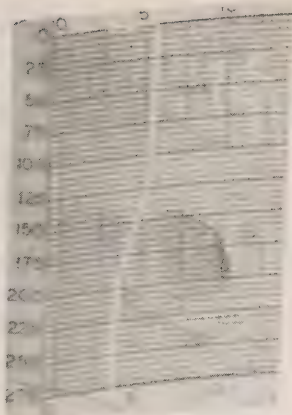
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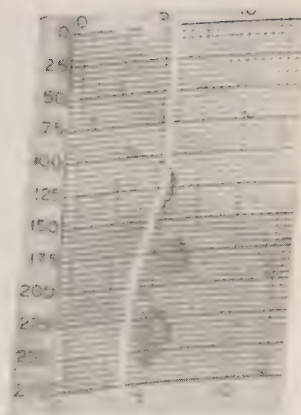
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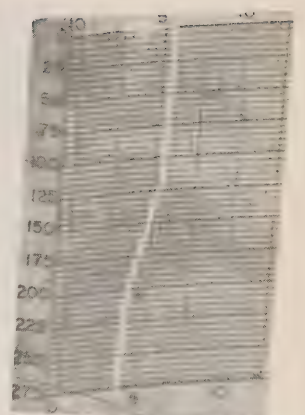
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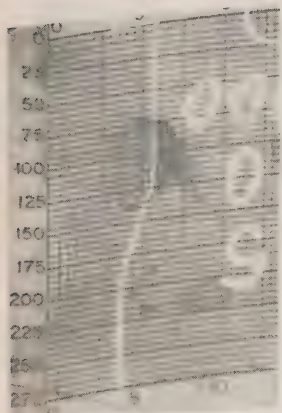
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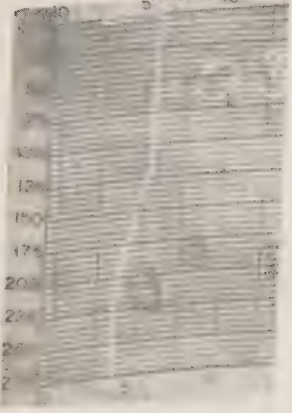
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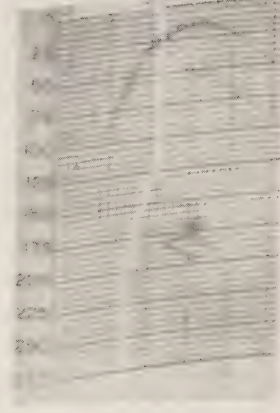
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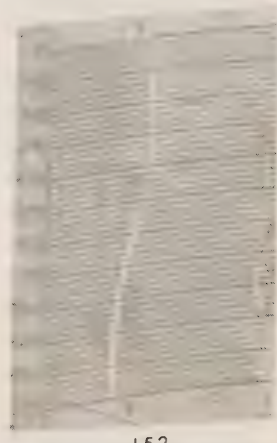
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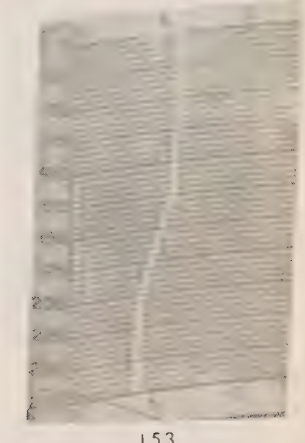
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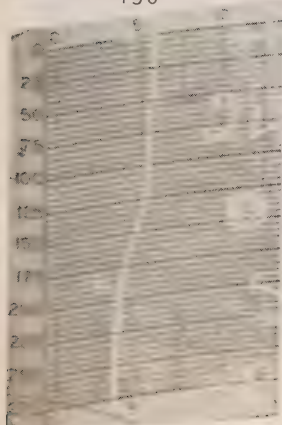
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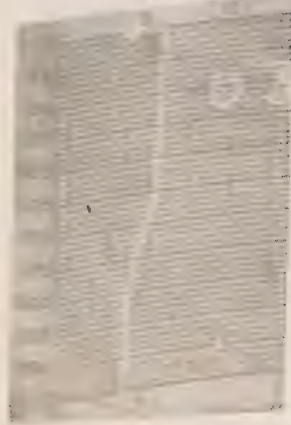
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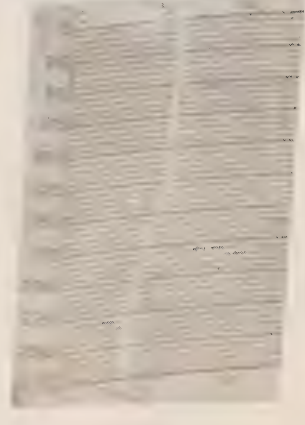
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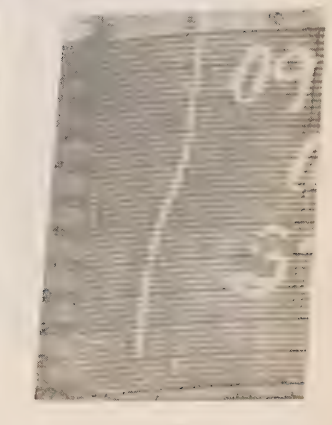
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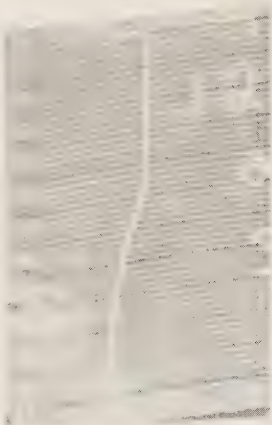
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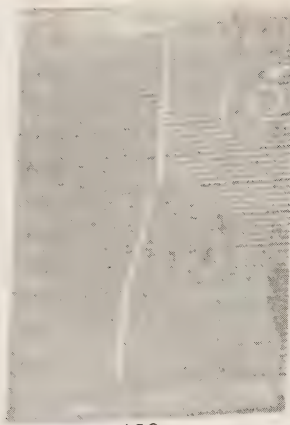
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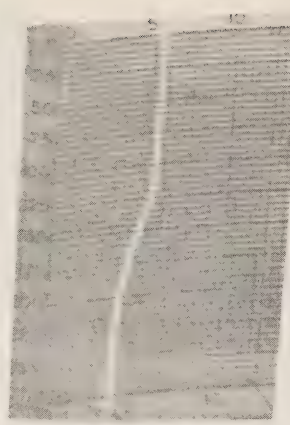
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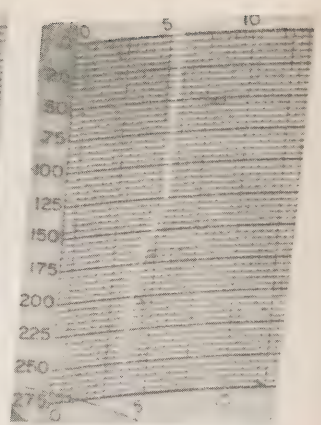
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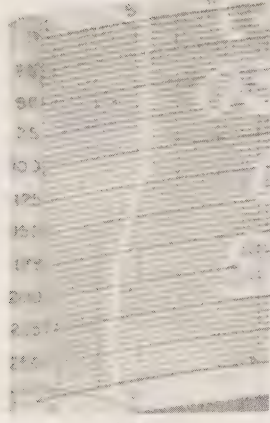
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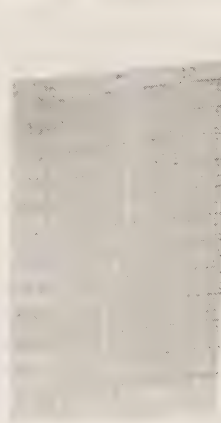
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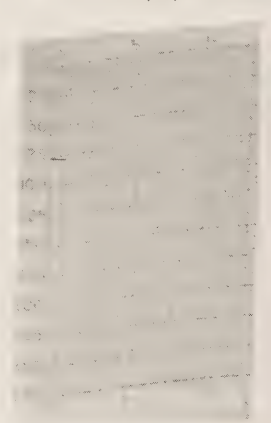
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163



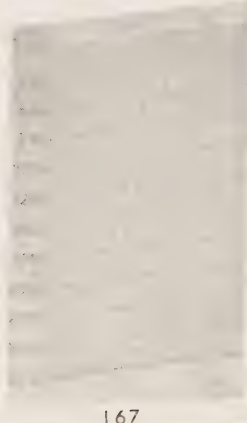
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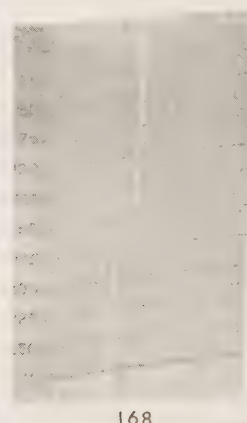
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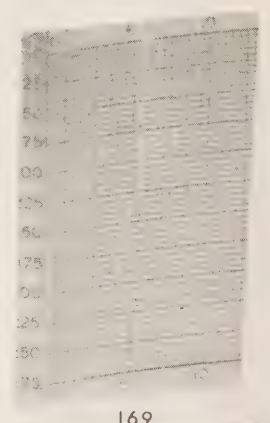
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167



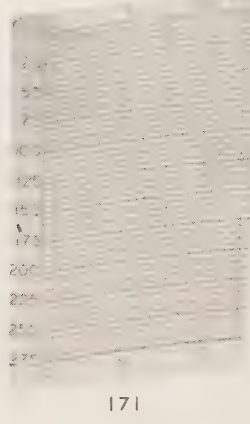
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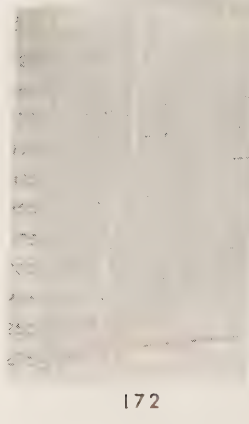
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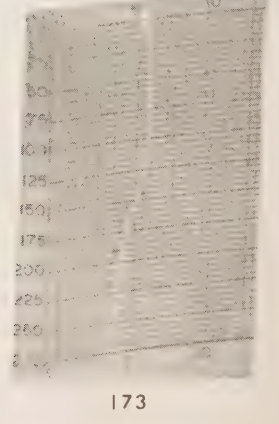
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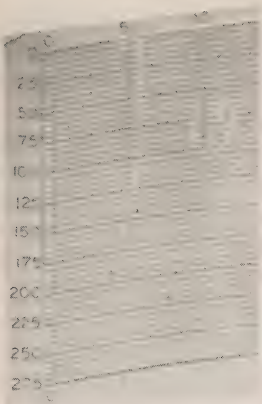
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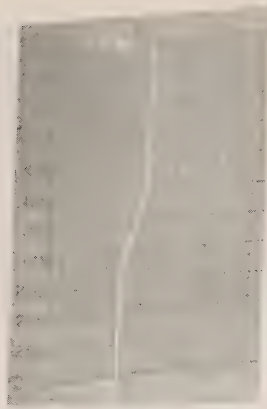
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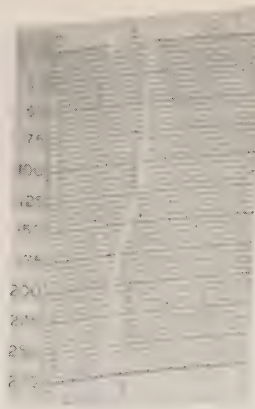
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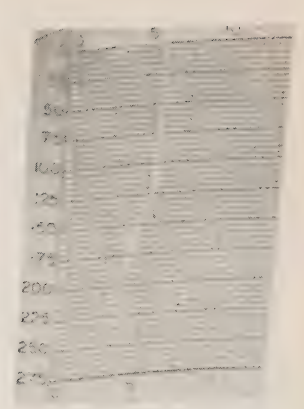
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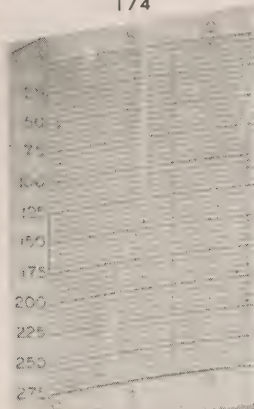
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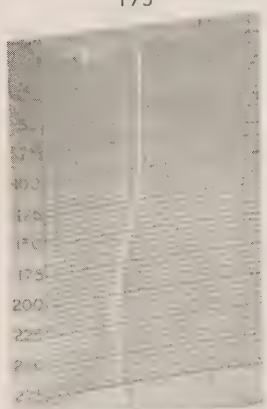
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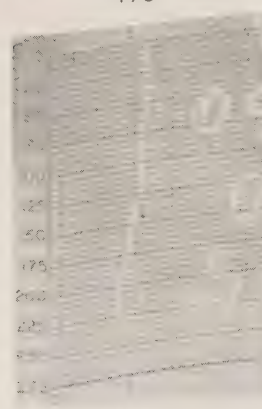
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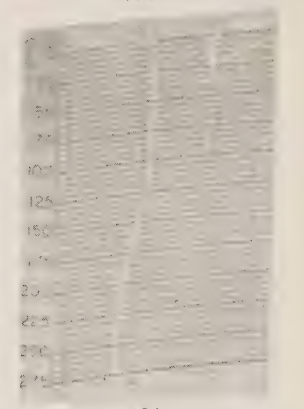
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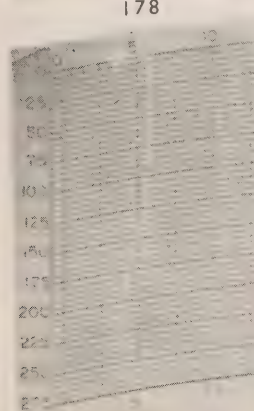
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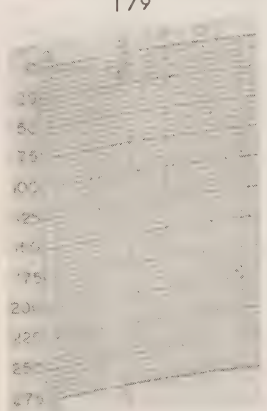
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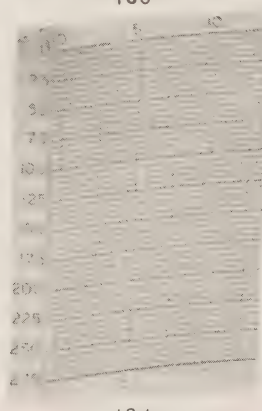
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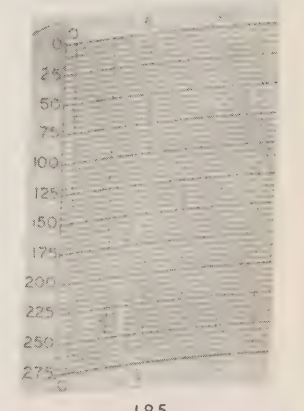
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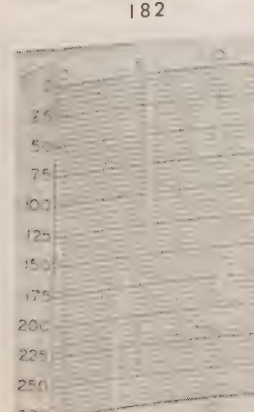
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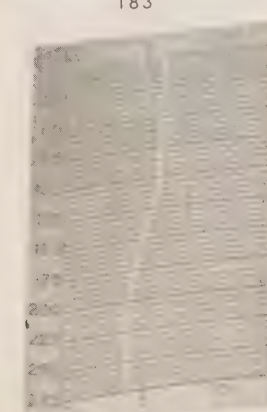
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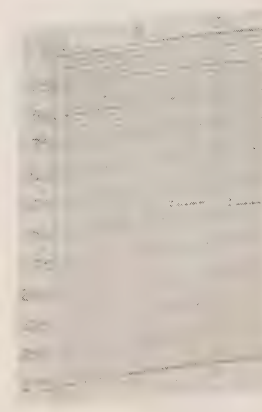
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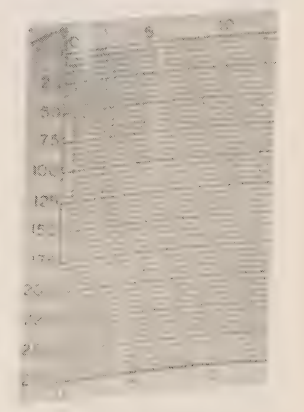
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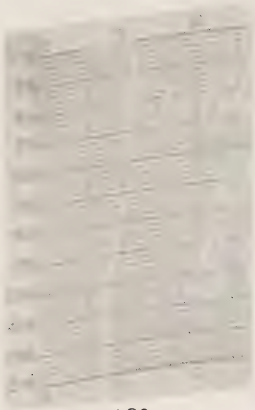
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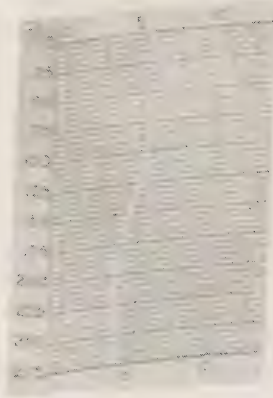
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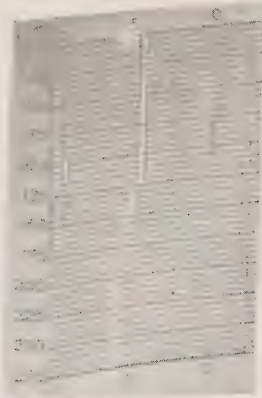
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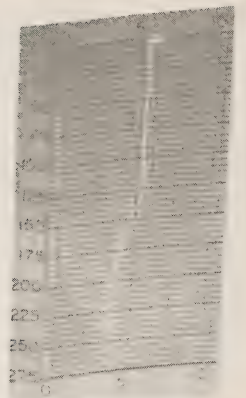
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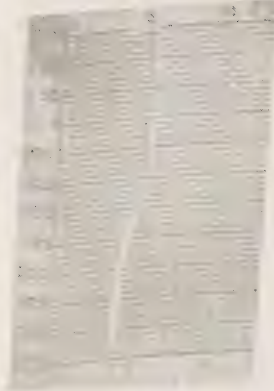
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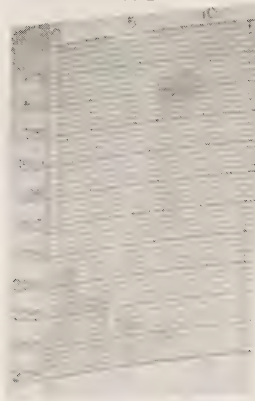
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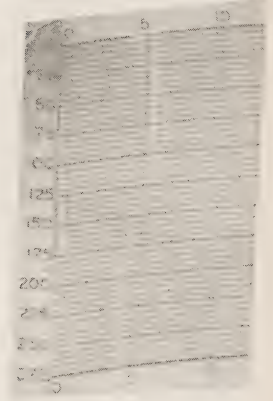
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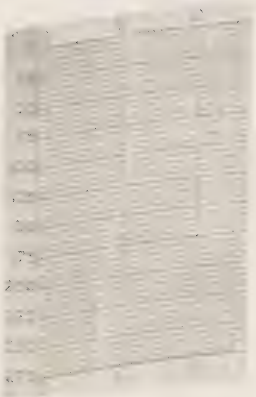
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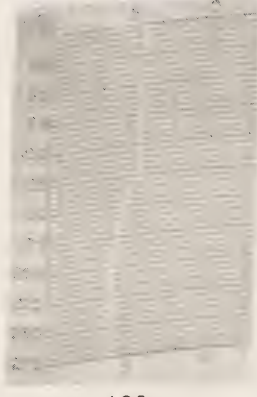
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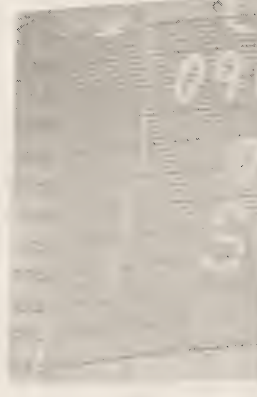
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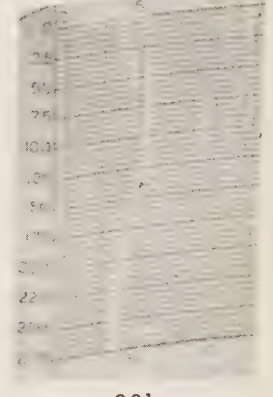
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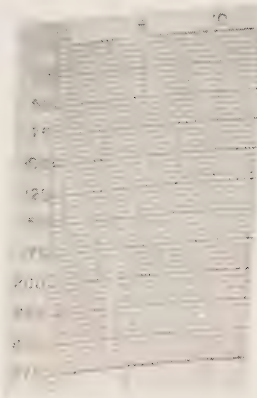
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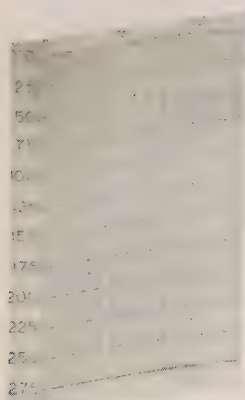
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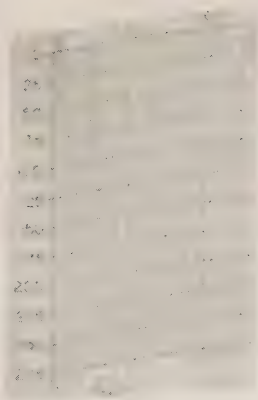
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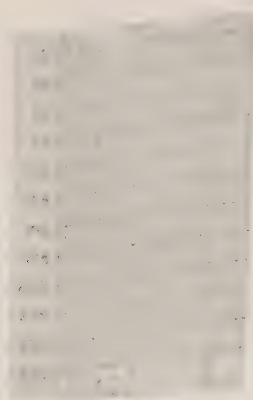
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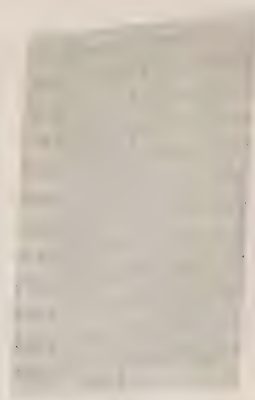
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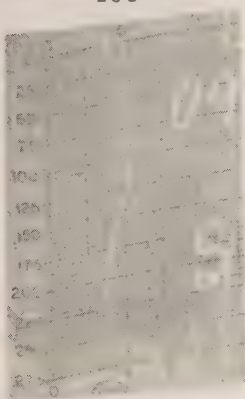
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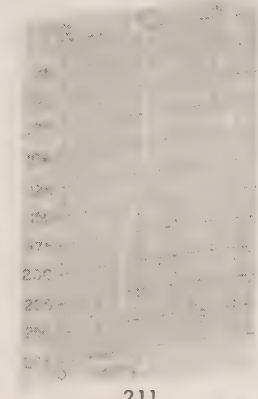
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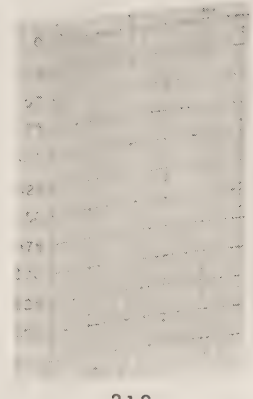
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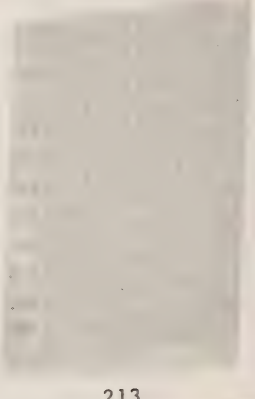
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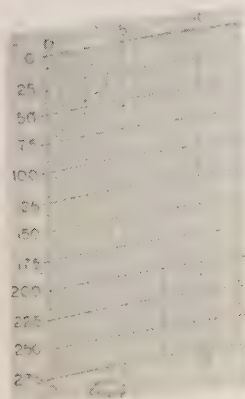
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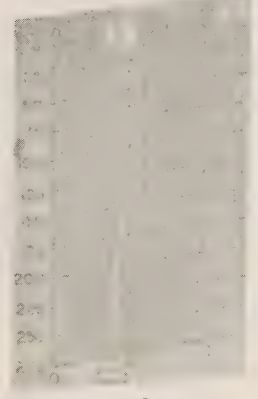
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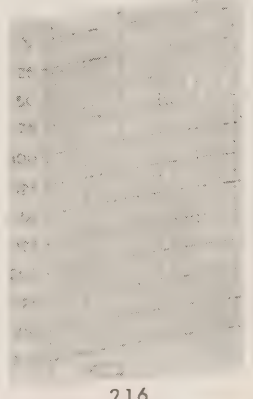
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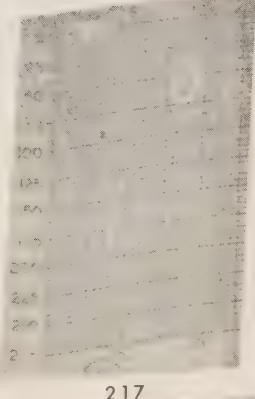
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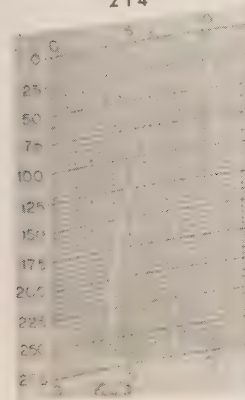
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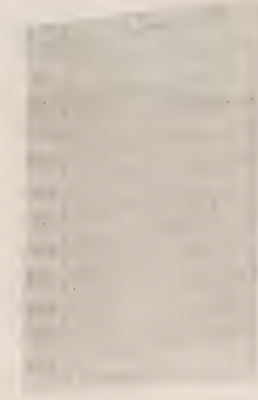
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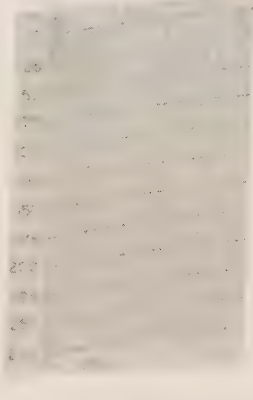
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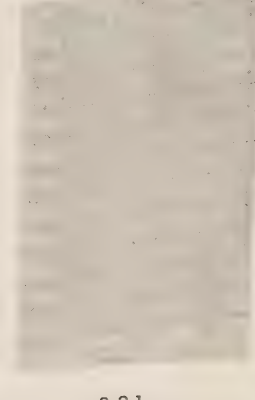
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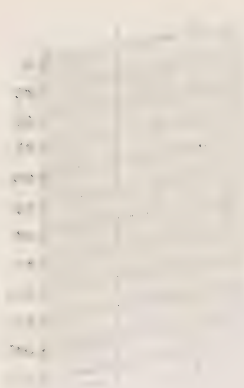
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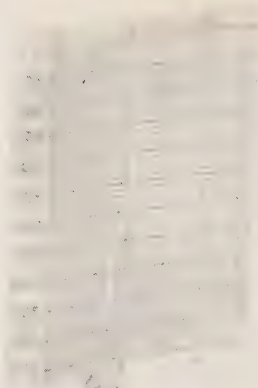
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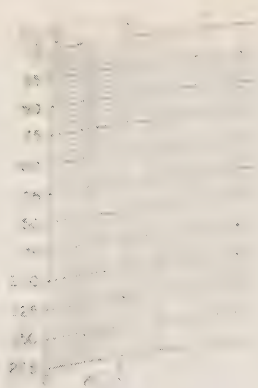
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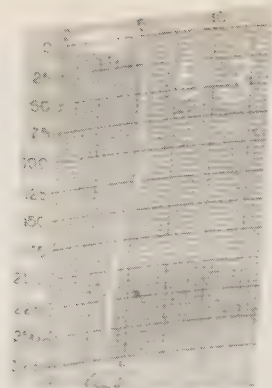
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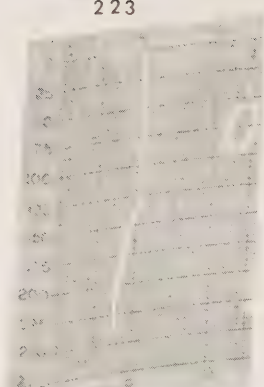
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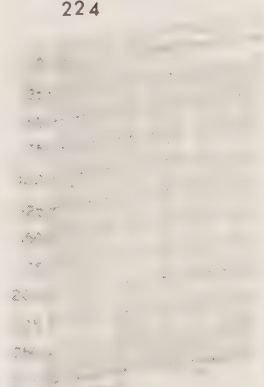
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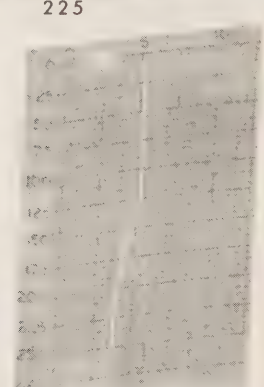
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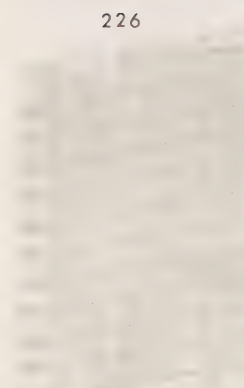
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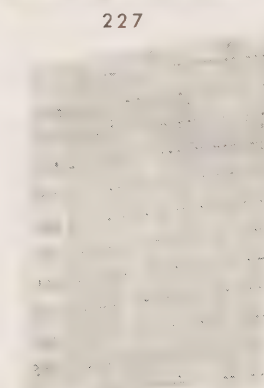
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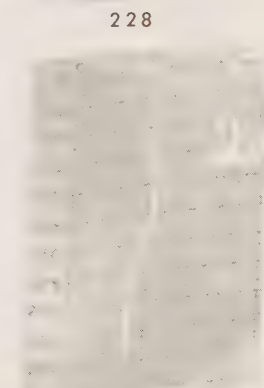
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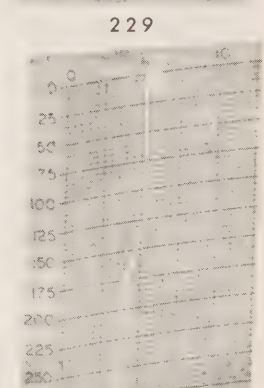
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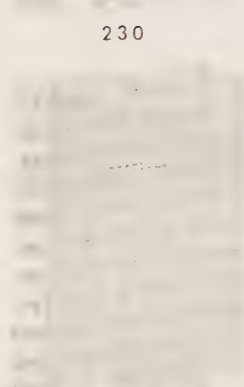
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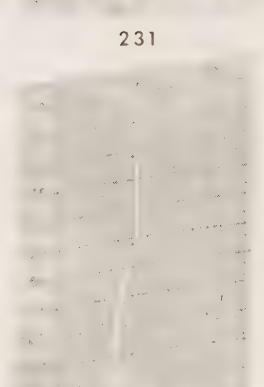
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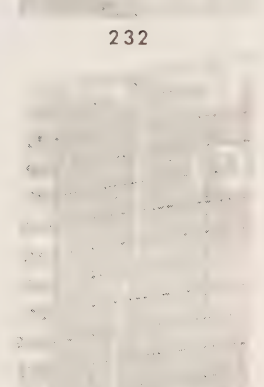
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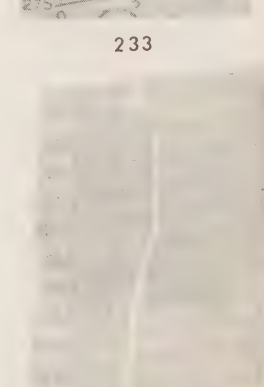
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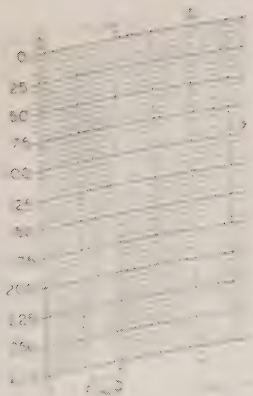
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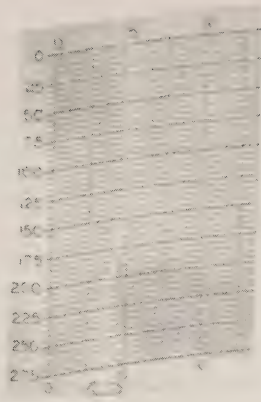
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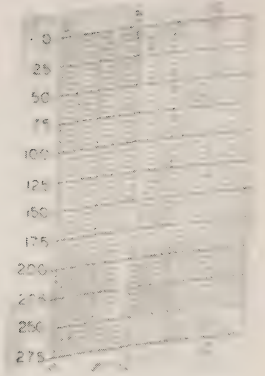
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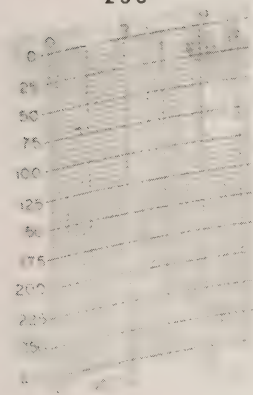
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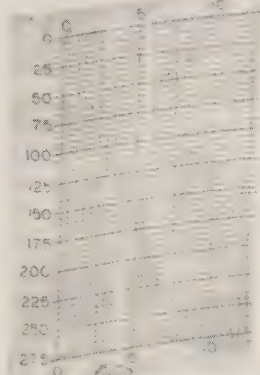
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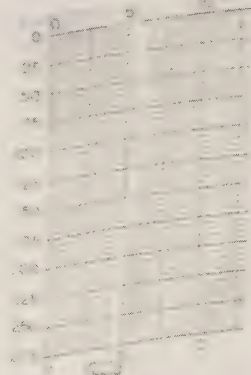
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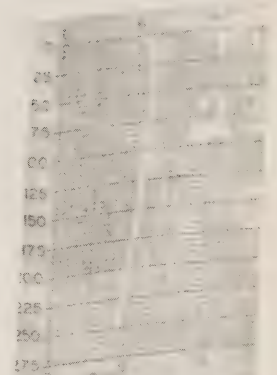
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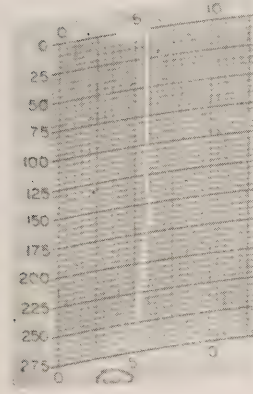
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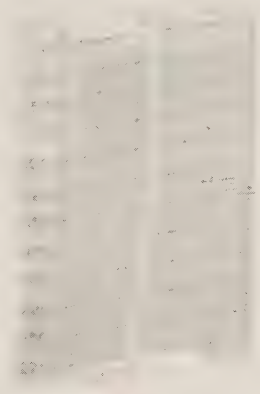
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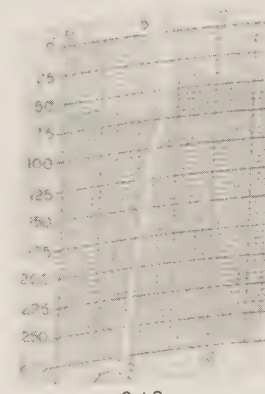
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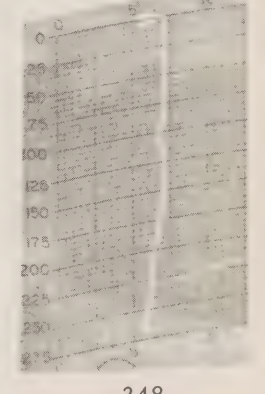
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SECTION V

Surface Salinity Data

Surface Salinity Observations

Date-Time GMT	Position Latitude	Longitude	Salinity ‰
CCGS "St. Catharines", Survey P-65-5			
65-12-11-00.3	48°33'n	125°33'w	32.240
11-02.3	48°38'	126°00'	32.323
11-04.7	48°42'	126°40'	32.199
11-12.3	48°51'	128°40'	32.226
11-16.3	48°55'	129°40'	32.374
11-20.0	49°02'	130°40'	32.509
12-02.7	49°10'	132°40'	32.574
12-06.8	49°12'	133°40'	32.523
12-14.2	49°21'	135°40'	32.410
12-18.0	49°26'	136°40'	32.397
12-22.0	49°30'	137°40'	32.483
13-05.3	49°37'	139°40'	32.571
13-08.9	49°41'	140°40'	32.586
13-13.0	49°45'	141°40'	32.567
13-19.4	49°49'	142°40'	32.596
14-04.0	49°44'	143°40'	32.546
16-00.0	50°02'	144°54'	32.585
17-08.3	50°42'	143°52'	32.596
19-00.0	50°00'	145°12'	32.530
20-00.0	50°04'	145°06'	32.612
21-00.0	50°01'	145°25'	32.631
22-00.0	50°02'	145°16'	32.615
23-00.0	50°07'	145°13'	32.631
24-00.0	50°04'	145°44'	32.676
25-00.0	50°07'	145°29'	32.649
26-00.0	50°00'	145°01'	32.639
27-00.0	50°05'	144°54'	32.801
28-00.0	49°53'	145°02'	32.619
66-01-04-00.0	49°50'	145°04'	32.680
05-00.0	49°58'	144°57'	32.685
06-00.0	50°01'	145°09'	32.724
07-00.0	50°08'	145°07'	32.683
08-00.0	50°01'	145°03'	32.714
09-00.0	50°07'	145°18'	32.712
10-00.0	50°03'	145°06'	32.657
11-00.0	50°09'	144°59'	32.689
12-00.0	49°55'	145°16'	32.682
13-00.0	49°50'	145°38'	32.736
14-00.0	50°04'	144°54'	32.676
15-00.0	50°04'	144°55'	32.670
16-00.0	50°00'	144°55'	32.690
18-04.2	50°00'	146°06'	32.671
18-11.2	50°42'	146°08'	32.653

Surface Salinity Observations

Date-Time	Position		Salinity
GMT	Latitude	Longitude	%
CCGS "St. Catharines", Survey P-65-5			
66-01-20-00.0	50°08'n	144°52'w	32.672
21-00.0	49°57'	145°01'	32.703
22-00.0	50°01'	144°52'	32.688
23-00.0	50°16'	144°48'	32.666
24-00.0	50°07'	144°44'	32.686
24-04.0	49°58'	143°56'	32.587
24-12.8	49°45'	141°40'	32.644
25-01.0	49°34'	138°40'	32.593
25-05.7	49°26'	136°40'	32.506
25-13.8	49°17'	134°40'	32.618
25-16.8	49°13'	133°40'	32.539
25-23.8	49°05'	131°40'	32.596
26-06.2	48°55'	129°40'	32.426
26-09.7	48°51'	128°40'	32.465
26-12.8	48°46'	127°40'	32.424
26-16.0	48°42'	126°40'	32.351
26-20.0	48°33'	125°33'	32.054

CCGS "Stonetown", Patrol No. 68

66-01-28-00.0	50°04'	145°11'	32.466
29-00.0	49°56'	144°59'	32.076
30-00.0	50°11'	144°48'	32.659
31-00.0	49°59'	145°00'	32.656
66-02-01-00.0	50°00'	145°10'	32.613
02-00.0	50°00'	144°55'	32.681
03-00.0	49°59'	144°58'	32.638
04-00.0	49°57'	145°00'	32.687
05-00.0	49°56'	145°05'	32.679
06-00.0	50°03'	144°58'	32.707
07-00.0	50°04'	145°30'	32.622
08-00.0	50°02'	145°25'	32.669
09-00.0	49°55'	144°56'	32.868
10-00.0	50°10'	144°57'	32.626
11-00.0	49°57'	144°53'	32.685
12-00.0	49°53'	144°50'	32.707
13-00.0	50°14'	144°50'	32.528
14-00.0	50°04'	145°04'	32.636
15-00.0	50°04'	144°54'	32.479
16-00.0	50°06'	145°00'	32.613
17-00.0	50°02'	144°56'	32.636
18-00.0	49°56'	144°54'	32.662

Surface Salinity Observations

Date-Time	Position		Salinity
GMT	Latitude	Longitude	‰
CCGS "Stonetown", Patrol No. 68			
66-02 - 19-00.0	50°02'n	144°52'w	32.653
21-00.0	49°56'	145°12'	32.610
22-00.0	49°48'	144°45'	32.534
23-00.0	50°05'	145°20'	32.654
24-00.0	50°07'	145°15'	32.671
25-00.0	50°02'	145°00'	32.648
26-00.0	49°56'	145°03'	32.675
27-00.0	50°00'	144°55'	32.686
28-00.0	49°59'	145°25'	32.951
66-03 - 01-00.0	50°00'	145°30'	32.640
02-00.0	50°00'	144°55'	32.657
03-00.0	49°59'	145°10'	32.674
04-00.0	50°02'	145°03'	32.635
05-00.0	50°03'	144°54'	32.686
06-00.0	49°58'	144°53'	32.672
07-00.0	50°05'	145°03'	32.672

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CANADA



GULF OF ST. LAWRENCE and HALIFAX SECTION

November 16 to November 25, 1964

No. 9

1966 Data Record Series

Canadian Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1966

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GULF OF ST. LAWRENCE and HALIFAX SECTION

November 16 to November 25, 1964

CODC Reference: 10-64-029

No. 9

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**Canadian Oceanographic Data Centre
615 Booth St., Ottawa, Canada**

Programmed by the Canadian Committee on Oceanography

DEPARTMENT OF ENERGY, MINES AND RESOURCES

MARINE SCIENCES BRANCH

GULF OF ST. LAWRENCE AND HALIFAX SECTION

Ship:	CSS "Hudson"
Local cruise designation:	BIO 29-64
Cruise period:	November 16 - November 25 1964
Observers:	T.R. Foote
	A.R. Coote
	W. Young
	E.A. Lewis
	F.D. Ewing

BEDFORD INSTITUTE OF OCEANOGRAPHY, Dartmouth, N. S.

SECTION I

Description of data collection procedures



Illustration of Information Building
Dept. of Navy and U.S. Coast Guard
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INTRODUCTION

Purpose (Primary)

To sample temperatures and salinities in the upper 250 metres at representative stations throughout the Gulf of St. Lawrence and thus to provide the temperature - salinity data with which the Ice Forecast Central Office of the Department of Transport prepared their ice forecast for the 1964-65 winter season in the Gulf.

Purpose (Secondary)

- A) To extend the ice forecast coverage to include a line of oceanographic stations from the Seven Islands to Ste. Anne Bay section up to and including the Saguenay River estuary to obtain information on:
- 1) The ion product of CaCO_3 in the Gulf;
 - 2) CO_2 in water measurements for calculations of CO_2 exchange between air and sea water, and
 - 3) The measurement of the Ca^{++}/Cl ‰ ratio of sea water at various salinities ranging from 10 ‰ to 33 ‰.
- B) To run two short lines of bottom sediment sampling stations, one on Orphan Bank and the other between St. Paul Island and the Magdalen Islands.
- C) To reoccupy the "Halifax Section" of oceanographic and bathythermograph stations.

EXTRACT OF CRUISE LOG

Depart Halifax N.S. 16 November 1964.

Arrive Halifax N.S. 25 November 1964.

OBSERVATIONAL PROCEDURES

Temperature and salinity data were collected in single casts at 44 stations throughout the Gulf and Saguenay River estuary and 7 single casts on the "Halifax Section". Standard sampling procedures and depths were used with an additional depth at 40 metres, as requested by Ice Central.

Water samples were measured for salinity on board by the conductivity bridge method (Auto-Lab Salinometer).

Water depths were obtained with the Alden 411-PGR.

Bathythermograph lowerings were made just prior to the oceanographic cast. B. T. slides and records were processed at the Bathythermograph Centre, Bedford Institute of Oceanography.

Weather observations were made each hour by the ship's officers.

PERSONNEL

At Sea:

T.R. Foote	Officer-in-Charge
A.R. Coote	
W. Young	
E.A. Lewis	
F.D. Ewing	
C. Cunningham	
T.A. Holler	
W.G. MacIntyre	

Data Analyses

Compilation of Data:	T.R. Foote
Salinity determinations:	W. Young
B. T. processing:	D.M. MacDonald
	T.A. Grant

SECTION 11

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an **"estimate of precision"** for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation (σ)** can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under **"GENERAL INFORMATION"** in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record **"A"** is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an **"interpolation error estimate"** derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the **"measurement error estimate"** comprises the **"combined measurement and interpolation error estimate"**. It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

1 IDENT. CODE		2 LATITUDE (N=+)		3 LONGITUDE (W=+)		5 DATE		6 TIME		7 DEPTH		9 NO. DEPTHS OBS'D.		VESSEL																					
COUNTRY INST.		DEG. MIN.		DEG. MIN.		YEAR MONTH DAY		HOURS G.M.T.		TO BOTTOM		ENTERED BY		CHECKED BY																					
1 8						19 20 21 22 23 24 25 26 27 28 29 30 31		1 10		1 10		34 35																							
10 WATER		11 WAVES I		12 WAVES II		13 WIND		14 BAROMETER		15 AIR TEMP.		16 WET BULB		17 W.W. CODE		18 CLOUD		19 HOURS AFTER H.W.		20 UNASSIGNED		21 CRUISE REFERENCE NUMBER		22 CONSEC. NUMBER		23		24							
COLOUR TRANS.		Dw Dw Pw Hw		Dw Dw Pw Hw		DIR.		10°C		10		10		10		10		10		10		10		10		10		10							
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80		6 TIME		7 DEPTH OF SAMPLE		8 TEMPERATURE		9 SALINITY		10 OXYGEN		13 PO ₄ - P		14 TOTAL - P		15 NO ₂ - N		16 NO ₃ - N		17 SiO ₂ - Si		18 p.H.		19		20		21		22		23		24	
1																																			
2																																			
3																																			
4																																			
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17																																			
18																																			
19																																			
20																																			
OBSERVED CARD																																			

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $^{1/3} (\bar{V}_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) WW-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFERENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.

(2) CONSECUTIVE NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation.

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the predominant **non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_3
					(13) pH.

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

- (1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.
- When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.
- (2) DEPTH: The depth in metres at the reversal time of deepest cast.
- (3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01°C . Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.
- (4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 \text{ C1}\%$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.
- In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).
 In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.
- (5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places.
 An alphabetical character following the value is the measurement error estimate as referred to under (3).
- (6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).
- (7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO ₄	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO ₂	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre -- No dissolved nitrogen included --
(11) NO ₃	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO ₂	Silicate-Silicon reported in whole microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
 - (i) the interpolation error estimate is less than twice the standard deviation of measurement
 - the interpolated value is reported to three decimal places (e.g., 30.139).
 - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 - the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 - the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

(5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.

(6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).

(7) DELTA-D: The geo-potential anomaly as defined by:

$$\Delta D = \int_0^P \delta dp$$

ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).

(8) POTENTIAL ENERGY ANOMALY:

The Potential energy anomaly χ as defined by:

$$\chi = \frac{1}{g} \int_0^P p \delta dp = \int_0^Z \rho p \delta dz$$

χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).

(9) SPECIFIC VOLUME ANOMALY:

The specific volume anomaly as defined by:

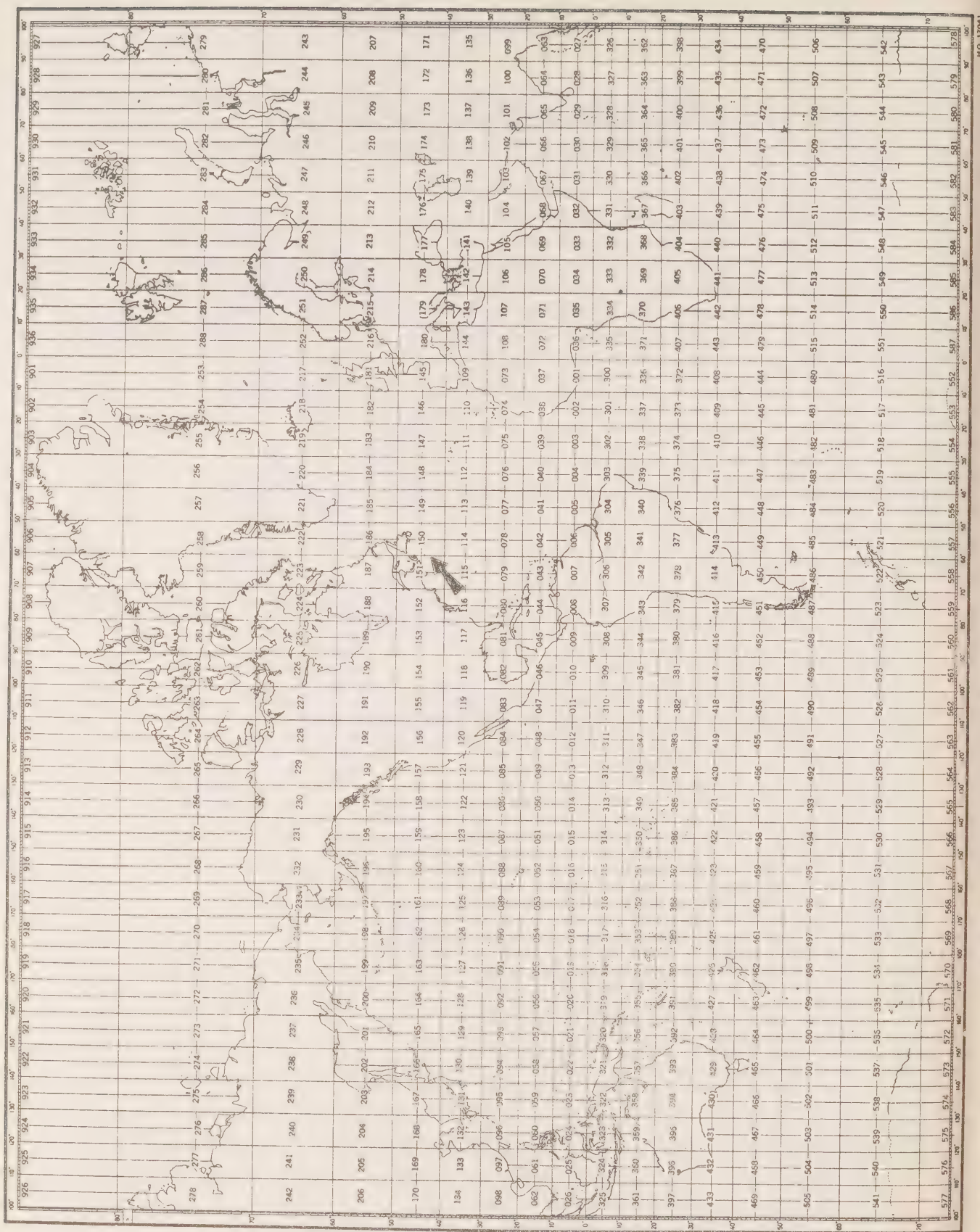
$$\delta = \alpha - \alpha_{35.0.P}$$

δ is expressed in ml/gr, and conventionally reported as $10^4 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

* (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.



MARS DEN SQUARE CHART

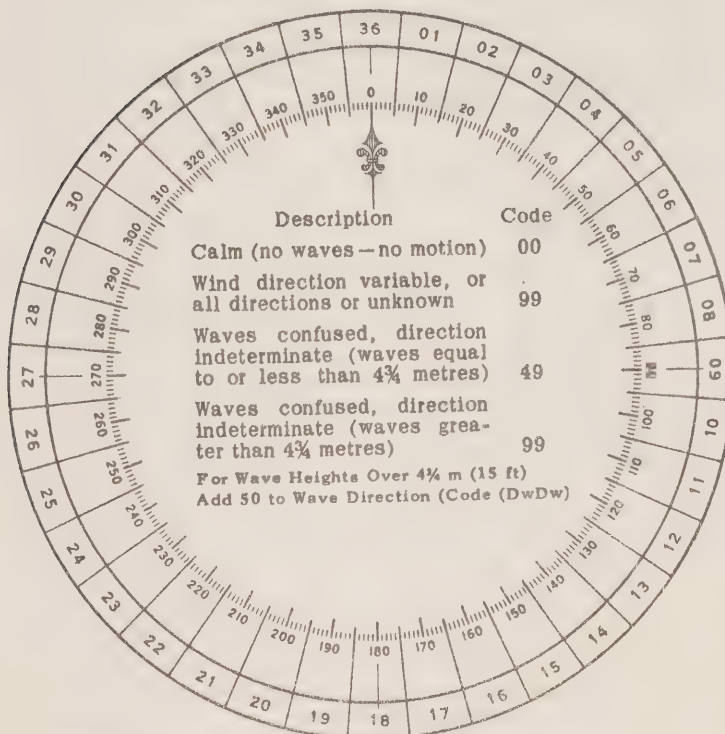
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (P_w)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (H_w)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m (2½ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m (13½ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)		4 7 m (22½ ft)
5	2½ m (8 ft)		5 7½ m (24 ft)
6	3 m (9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Add
50
to
Dw Dw

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure		ww	
No meteors except photometeors	Haze, dust, sand or smoke	00	Cloud development not observed or not observable
		01	Clouds generally dissolving or becoming less developed
		02	State of sky on the whole unchanged
		03	Clouds generally forming or developing
		characteristic change of the state of sky during the past hour	
		04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes
		05	Haze
		06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation
		07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen
		08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm
		09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour
		10	Mist
		11	Patches of shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on continuous land or 10 metres at sea
		12	More of less deeper than about 2 metres on continuous land or 10 metres at sea
		13	Lightning visible, no thunder heard
		14	Precipitation within sight, not reaching the ground or the surface of the sea
		15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station
		16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station
		17	Thunderstorm, but no precepitation at the time of observation
		18	Squalls at or within sight of the station during the preceding hour
		19	Funnel clouds or at the time of observation
ww = 20 - 29			
		Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
		20	Drizzle (not freezing) or snow grains
		21	Rain (not freezing)
		22	Snow
		23	Rain and snow or ice pellets, type (a)
		24	Freezing drizzle or freezing rain
		25	Shower(s) of rain
		26	Shower(s) of snow, or of rain and snow
		27	Shower(s) of hail, or of rain and hail
		28	Fog or ice fog
		29	Thunderstorm (with or without precipitation)
ww = 30 - 39			
		Duststorm, sandstorm, drifting or blowing snow	
		30	Slight or moderate duststorm or sandstorm
		31	—has decreased during the preceding hour
		32	—no appreciable change during the preceding hour
		33	—has begun or has increased during the preceding hour
		34	Severe duststorm or sandstorm
		35	—has decreased during the preceding hour
		36	—no appreciable change during the preceding hour
		37	—has begun or has increased during the preceding hour
		38	Slight or moderate blowing snow
		39	Heavy blowing snow
		generally low (below eye level)	
		generally high (above eye level)	
ww = 40 - 49			
		Fog or ice fog at the time of observation	
		40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer
		41	Fog or ice fog in patches
		42	Fog or ice fog, sky visible
		43	Fog or ice fog, sky invisible
		44	Fog or ice fog, sky visible
		45	Fog or ice fog, sky invisible
		46	Fog or ice fog, sky visible
		47	Fog or ice fog, sky invisible
		48	Fog, depositing rime, sky visible
		49	Fog, depositing rime, sky invisible

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | | |
|----|--|---|--------------------------------------|
| 50 | Drizzle, not freezing, intermittent | { | slight at time of observation |
| 51 | Drizzle, not freezing, continuous | | |
| 52 | Drizzle, not freezing, intermittent | { | moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | | |
| 54 | Drizzle, not freezing, intermittent | { | heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | | |
| 56 | Drizzle, freezing, slight | | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | | |
| 58 | Drizzle and rain, slight | | |
| 59 | Drizzle and rain, moderate or heavy | | |

vw = 60 - 69 Rain

- | | | | |
|----|---|---|---------------------------------|
| 60 | Rain, not freezing, intermittent | { | slight at time of observation |
| 61 | Rain, not freezing, continuous | | |
| 62 | Rain, not freezing, intermittent | { | moderate at time of observation |
| 63 | Rain, not freezing, continuous | | |
| 64 | Rain, not freezing, intermittent | { | heavy at time of observation |
| 65 | Rain, not freezing, continuous | | |
| 66 | Rain, freezing, slight | | |
| 67 | Rain, freezing, moderate or heavy | | |
| 68 | Rain or drizzle and snow, slight | | |
| 69 | Rain or drizzle and snow, moderate or heavy | | |

70 - 79 Solid precipitation not in showers

- | | | | |
|----|---|---|---------------------------------|
| ww | | | |
| 70 | Intermittent fall of snow flakes | { | slight at time of observation |
| 71 | Continuous fall of snow flakes | | |
| 72 | Intermittent fall of snow flakes | { | moderate at time of observation |
| 73 | Continuous fall of snow flakes | | |
| 74 | Intermittent fall of snow flakes | { | heavy at time of observation |
| 75 | Continuous fall of snow flakes | | |
| 76 | Ice prisms (with or without fog) | | |
| 77 | Snow grains (with or without fog) | | |
| 78 | Isolated starlike snow crystals (with or without fog) | | |
| 79 | Ice pellets, type (a) | | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | | | |
|----|--|---|---------------------|---|
| 80 | Rain shower(s), slight | | | |
| 81 | Rain shower(s), moderate or heavy | | | |
| 82 | Rain shower(s), violent | | | |
| 83 | Shower(s) of rain and snow mixed, slight | | | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | | | |
| 85 | Snow shower(s), slight | | | |
| 86 | Snow shower(s), moderate or heavy | | | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain | { | - slight | |
| 88 | or rain and snow mixed | | | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | { | - moderate or heavy | |
| 90 | | | | |
| 91 | Slight rain at time of observation | | | |
| 92 | Moderate or heavy rain at time of observation | | | |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation | | { | thunderstorm during the preceding hour but not at time of observation |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | | | |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | { | | |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation | | | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | { | | thunderstorm at time of observation |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | | | |
| 99 | Thunderstorm, heavy, with hail at time of observation | | | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{1}{2}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11

CCO Institute Code

- 01 Atlantic Oceanographic Group.
- 02 Pacific Oceanographic Group.
- 03 Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, Ste. Anne de Bellevue, P. Q.
05. Biological Station, St. John's, Nfld.
06. Station de Biologie Marine, Grande Riviere, P. Q.
07. Marine Sciences Branch, Central Region.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography, (MSB, Atlantic Region).
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Institute of Oceanography, University of British Columbia.
14. Institute of Oceanography, Dalhousie University.
15. Marine Sciences Branch, Pacific Region.
16. Department of Transport.
17. Marine Sciences Centre, McGill University.
18. RCN East Coast.
19. RCN West Coast.
20. Ontario Water Resources Commission.
21. Department of National Health and Welfare.
22. Water Research Branch, Dept. of Energy, Mines and Resources.

SECTION 111

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Atlantic Oceanographic Group
<u>Observation Platform:</u>	CSS "Hudson"
<u>Vessel's cruising speed:</u>	16 knots
<u>Total number of stations occupied:</u>	51
<u>Anemometer Height above sea level:</u>	25 metres
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Wet bulb temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.008

C-REF-NO 029 YR 1964 DEPTH 73 WAVES 1 0423 AIR T 01.3 VIS 3
 CONS. NO 001 MONTH 11 MXSAMPD 01 WAVES 2 00XX WET B 01.0 STN
 LAT 46-547N DAY 17 NO.DPTH 7 WND-DIR 040 WW-CODE 71
 LON 60-108W HR 14.7 W-COLOR WND-SPD 11 CLD-TPE X
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 990.2 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
147	0000	061 B	30225		2380	14692
147	0010	0614	30172		2375	14694
147	0020	0614	30248		2381	14697
147	0030	0612	30286		2384	14698
147	0040	0612	30352		2390	14701
147	0050	0600	30419		2396	14698
147	0070	0542	30678		2423	14681

4WAVES INCONSISTENT

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EV	SVA
0000	0610 B	30225		2380	14692	0000	00000	4111
0010	0614	30172		2375	14694	0042	00002	4156
0020	0614	30248		2381	14697	0083	00008	4100
0030	0612	30286		2384	14698	0124	00019	4070
0050	0600	30419		2396	14698	0205	00052	3958

C-REF-NO 029 YR 1964 DEPTH 271 WAVES 1 0823 AIR T 01.3 VIS 3
 CONS. NO 002 MONTH 11 MXSAMPD 02 WAVES 2 00XX WET B 01.0 STN
 LAT 47-050N DAY 17 NO.DPTH 11 WND-DIR 080 WW-CODE 70
 LON 60-000W HR 16.7 W-COLOR WND-SPD 12 CLD-TPE X
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 989.4 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
167	0000	057 B	30393		2398	14678
167	0009	0596	30258		2384	14688
167	0018	0599	30183		2378	14690
167	0027	0581	30405		2397	14687
167	0036	0537	30585		2417	14673
167	0045	0463	30936		2452	14648
167	0068	0392	31480		2502	14629
167	0091	0200	32177		2574	14559
167	0136	0093	33163		2660	14532
167	0181	0348	33978		2705	14653
167	0227	0452	34494		2735	14721

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PJT.EV	SVA
0000	0570 B	30393		2398	14678	0000	00000	3941
0010	0597	30241		2383	14689	0040	00002	4086
0020	0597	30221		2381	14690	0081	00008	4101
0030	0569	30458		2403	14683	0122	00019	3994
0050	0445 D	3107 C		2464	14643	0194	00048	3308
0075	0335 D	31691		2524	14609	0270	00095	2740
0100	0150	32401		2595	14541	0330	00149	2053
0125	0086	3295 B		2643	14524	0377	00201	1605
0150	0161 I	33442		2678	14569	0413	00252	1282
0175	0308 E	33883		2701	14643	0443	00301	1059
0200	0327 I	3421 B		2725	14660	0467	00347	0844
0225	0441 B	34476		2735	14716	0487	00391	0751

C-REF-NO 029 YR 1964 DEPTH 450 WAVES 1 0522 AIR T 00.5 VIS 5
 CONS. NO 003 MONTH 11 MXSAMPD 02 WAVES 2 00XX WET B 00.0 STN
 LAT 47-150N DAY 17 NO.DPTH 11 WND-DIR 050 WW-CODE 70
 LON 59-502N HR 18.4 W-CJLJR WND-SPD 10 CLD-TPE X
 MARSD SQ 150 C/I 1810 W-TRNSP BARJ 989.9 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
184	0000	050 B	32065		2537	14671
184	0010	0488	32005		2534	14667
184	0019	0490	32004		2534	14669
184	0029	0489	32012		2534	14670
184	0039	0486	32042		2537	14671
184	0048	0464	32126		2546	14665
184	0072	0049	32982		2648	14499
184	0097	0046	33099		2657	14504
184	0145	0022	33546		2694	14507
184	0193	0409	34100		2708	14692
184	0242	0443	34406		2729	14718

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PJT.EN	SVA
0000	0500 B	32065		2537	14671	0000	00000	2610
0010	0488	32005		2534	14667	0026	00001	2644
0020	0490	32004		2534	14669	0053	00005	2647
0030	0489	32013		2535	14671	0080	00012	2641
0050	0432 F	3219 C		2555	14652	0131	00033	2448
0075	0037 D	3302 B		2651	14495	0181	00064	1531
0100	0039 B	33121		2659	14501	0218	00097	1451
0125	0008 I	33335		2678	14494	0253	00137	1271
0150	0061 F	33607		2697	14526	0283	00178	1093
0175	0260 I	3390 B		2707	14623	0309	00223	1014
0200	0302 I	3410 E		2718	14647	0333	00269	0904
0225	0383 I	3429 B		2726	14689	0355	00317	0841

C-REF-NO 029 YR 1964 DEPTH 468 WAVES 1 0222 AIR T 00.4 VIS 5
 CONS. NO 004 MONTH 11 MXSAMPD 04 WAVES 2 0833 WET B 00.0 STN
 LAT 47-250N DAY 17 NO.DPTH 14 WND-DIR 020 WW-CODE 70
 LON 59-351W HR 20.2 W-COLOR WND-SPD 12 CLD-TPE X
 MARSD SQ 150 C/I 1810 W-TRNSP BARO 990.0 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
202	0000	047 B	32069		2541	14659
202	0010	0466	32045		2540	14658
202	0020	0465	32095		2544	14650
202	0030	0457	32106		2545	14659
202	0040	0401	32220		2560	14638
202	0050	0224 B	32692		2613	14570
202	0075	0047	32918		2643	14498
202	0100	0065	33147		2660	14513
202	0150	0347	33843		2694	14655
202	0200	0484	34247		2712	14726
202	0250	0442	34385		2727	14719
202	0300	0417	34445		2735	14718
202	0400	0440	34759		2757	14748
202	0450	0436	34746		2757	14754

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PJT.EV	SVA
0000	0470 B	32069		2541	14659	0000	00000	2576
0010	0466	32045		2540	14658	0026	00001	2591
0020	0465	32095		2544	14660	0052	00005	2553
0030	0457	32106		2545	14659	0077	00012	2538
0050	0224 B	32692		2613	14570	0122	00030	1894
0075	0047	32918		2643	14498	0166	00057	1610
0100	0065	33147		2660	14513	0205	00092	1445
0125	0195 I	3349 C		2679	14580	0239	00131	1267
0150	0347	33843		2694	14655	0269	00173	1133
0175	0436	34080		2704	14700	0297	00219	1046
0200	0484	34247		2712	14726	0322	00268	0976
0225	0473 D	34338		2720	14727	0346	00319	0899
0250	0442	34385		2727	14719	0368	00372	0832
0300	0417	34445		2735	14718	0408	00486	0765
0400	0440	34759		2757	14748	0475	00722	0566

C-REF-NO 029	YR 1964	DEPTH 247	WAVES 1 0122	AIR T 02.2	VIS 7
CONS. NO 005	MONTH 11	MXSAMPD 02	WAVES 2 0833	WET B 00.2	STN
LAT 47-348N	DAY 17	NO.DPTH 11	WND-DIR 360	WW-CODE 70	
LON 59-200W	HR 22.2	W-COLOR	WND-SPD 12	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 989.4	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
222	0000	054 B	31814		2513	14684
222	0010	0531	31795		2513	14682
222	0020	0531	31802		2513	14684
222	0030	0500	31879		2523	14673
222	0040	0460	31999		2537	14660
222	0050	0418	32093		2548	14645
222	0075	0107 B	32873		2636	14524
222	0100	0082	33060		2652	14520
222	0150	0076	33106		2656	14526
222	0200	0140	33396		2675	14567
222	0230	0382	34030		2706	14686

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PJT.EV	SVA
0000	0540 B	31814		2513	14684	0000	00000	2841
0010	0531	31795		2513	14682	0029	00001	2847
0020	0531	31802		2513	14684	0057	00006	2842
0030	0500	31879		2523	14673	0085	00013	2752
0050	0418	32093		2548	14645	0138	00035	2511
0075	0107 B	32873		2636	14524	0191	00067	1678
0100	0082	33060		2652	14520	0231	00103	1521
0125	0071	3310 D		2655	14519	0269	00147	1488
0150	0076	33106		2656	14526	0307	00199	1482
0175	0077 G	3318 D		2662	14532	0343	00260	1430
0200	0140	33396		2675	14567	0378	00327	1303
0225	0343 C	3392 B		2701	14667	0408	00392	1074

C-REF-NO 029	YR 1964	DEPTH 174	WAVES 1 3523	AIR T 02.1	VIS 7
CONS. NO 006	MONTH 11	MXSAMPD 02	WAVES 2 0833	WET B 01.8	STN
LAT 48-000V	DAY 18	NO.DPTH 10	WND-DIR 360	WW-CODE 70	
LOD 59-310W	HR 00.7	W-COLJR	WND-SPD 12	CLD-TPE X	
MARSU SQ 150	C/I 1810	W-TRNSP	BARO 990.1	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
007	0000	045 B	31805		2522	14647
007	0010	0425	31797		2524	14638
007	0020	0407	31883		2533	14633
007	0030	0333	32135		2560	14606
007	0040	0262	32398		2587	14581
007	0050	0189	32663		2613	14554
007	0075	0141	32806		2628	14539
007	0100	0114	32839		2632	14531
007	0150	0085	32940		2642	14528
007	0165	0087	33026		2649	14532

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PJT.EN	SVA
0000	0450 B	31805		2522	14647	0000	00000	2755
0010	0425	31797		2524	14638	0028	00001	2738
0020	0407	31883		2533	14633	0055	00006	2657
0030	0333	32135		2560	14606	0080	00012	2401
0050	0189	32663		2613	14554	0123	00029	1891
0075	0141	32806		2628	14539	0169	00058	1750
0100	0114	32839		2632	14531	0213	00097	1708
0125	0094	3287 B		2636	14527	0255	00147	1673
0150	0085	32940		2642	14528	0297	00205	1614

C-REF-NO 029	YR 1964	DEPTH 464	WAVES 1 3623	AIR T 02.1	VIS 7
CONS. NO 007	MONTH 11	MXSAMPD 04	WAVES 2 0833	WET B 01.8	STN
LAT 48-090N	DAY 18	NO.DPTH 14	WND-DIR 360	WW-CODE 70	
LDN 60-060W	HR 03.2	W-COLOR	WND-SPD 12	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 990.2	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
032	0000	047 B	31526		2498	14651
032	0010	0425	31504		2501	14634
032	0020	0425	31510		2501	14636
032	0030	0425	31499		2500	14637
032	0040	0424	31520		2502	14638
032	0050	0083	32217		2584	14500
032	0075	0026	32684		2625	14435
032	0100	0039	32973		2647	14499
032	0150	0165	33409		2675	14570
032	0200	0349	33991		2706	14666
032	0250	0431	34442		2733	14715
032	0300	0423	34611		2747	14722
032	0400	0428	34822		2764	14744
032	0450	0432	34839		2765	14754

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PJT.EN	SVA
0000	0470 B	31526		2498	14651	0000	00000	2985
0010	0425	31504		2501	14634	0030	00002	2959
0020	0425	31510		2501	14635	0060	00006	2955
0030	0425	31499		2500	14637	0089	00014	2964
0050	0083	32217		2584	14500	0141	00034	2164
0075	0026	32684		2625	14435	0191	00065	1778
0100	0039	32973		2647	14499	0233	00103	1553
0125	0090 B	3319 B		2662	14529	0270	00146	1424
0150	0165	33409		2675	14570	0305	00194	1310
0175	0260 C	3370 B		2690	14620	0336	00246	1166
0200	0349	33991		2706	14666	0364	00299	1028
0225	0402	34242		2720	14696	0388	00352	0894
0250	0431	34442		2733	14715	0409	00403	0777
0300	0423	34611		2747	14722	0445	00504	0647
0400	0428	34822		2764	14744	0503	00709	0505

C-REF-NO 029	YR 1964	DEPTH 439	WAVES 1 3422	AIR T 01.5	VIS 7
CONS. NO 008	MONTH 11	MXSAMPD 02	WAVES 2 0333	WET B 00.5	STN
LAT 48-220N	DAY 18	NO.DPTH 11	WVD-DIR 340	WW-CODE 85	
LON 60-390W	HR 05.8	W-COLOR	WVD-SPD 10	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 992.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
058	0000	048 B	31710		2512	14658
058	0010	0465	31665		2510	14653
058	0019	0468	31673		2510	14656
058	0029	0467	31690		2511	14657
058	0039	0466	31683		2511	14658
058	0048	0419 B	31748		2521	14641
058	0072	0061	32632		2619	14500
058	0097	0044	32844		2637	14499
058	0145	0228	33581		2684	14599
058	0193	0395	34198		2718	14687
058	0241	0438	34497		2737	14717

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0480 B	31710		2512	14658	0000	00000	2857
0010	0465	31665		2510	14653	0029	00001	2876
0020	0468	31675		2510	14656	0058	00006	2872
0030	0468	31688		2511	14658	0087	00013	2853
0050	0389 E	3182 C		2529	14629	0142	00036	2694
0075	0047 C	3267 B		2623	14495	0199	00071	1797
0100	0052 B	32885		2640	14504	0242	00109	1637
0125	0135 F	3326 C		2664	14550	0281	00153	1406
0150	0249	33655		2688	14610	0313	00199	1188
0175	0341 B	33992		2707	14659	0341	00245	1017
0200	0390 E	3423 C		2720	14687	0365	00291	0891
0225	0426 C	34411		2731	14708	0386	00337	0792

C-REF-NO 029	YR 1964	DEPTH 393	WAVES 1 3122	AIR T 01.3	VIS 7
CONS. NO 009	MONTH 11	MXSAMPD 04	WAVES 2 00XX	WET B 00.5	STN
LAT 48-358N	DAY 18	NO.DPTH 13	WND-DIR 310	WW-CODE 85	
LUN 61-110W	HR 08.6	W-COLOR	WND-SPD 08	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 990.8	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
086	0000	036 B	31664		2520	14607
086	0010	034C	31648		2520	14600
086	0020	0342	31607		2517	14601
086	0030	0346	31655		2520	14605
086	0040	0326	31674		2524	14599
086	0050	0052	32426		2603	14489
086	0075	0059	32681		2623	14500
086	0100	0010	32882		2642	14485
086	0149	024C	33619		2686	14606
086	0199	0398	34147		2713	14689
086	0249	0462	34564		2739	14730
086	0299	0438	34677		2751	14729
086	0379	0437	34755		2757	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0360 B	31664		2520	14607	0000	00000	2779
0010	0340	31648		2520	14600	0028	00001	2774
0020	0342	31607		2517	14601	0056	00006	2807
0030	0346	31655		2520	14605	0084	00013	2775
0050	0052	32426		2603	14489	0132	00032	1988
0075	0059	32681		2623	14500	0180	00062	1797
0100	0010	32882		2642	14485	0223	00100	1618
0125	0105 I	3324 D		2665	14537	0261	00144	1396
0150	0244	33631		2686	14608	0293	00190	1203
0175	0333	33915		2701	14654	0322	00237	1068
0200	0400	34157		2714	14690	0347	00286	0953
0225	0443	34390		2728	14715	0370	00335	0826
0250	0462	34568		2740	14730	0389	00382	0717
0300	0462 H	3474 E		2753	14740	0422	00475	0596

C-REF-NO 029	YR 1964	DEPTH 135	WAVES 1 3122	AIR T 00.2	VIS 7
CONS. NO 010	MONTH 11	MXSAMPD 01	WAVES 2 1433	WET 8 -00.7	STN
LAT 48-550N	DAY 18	NO.DPTH 9	WND-DIR 300	WW-CODE 70	
LON 61-400W	HR 11.2	W-COLOR	WND-SPD 07	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 990.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
112	0000	039 B	31615		2513	14619
112	0010	0380	31600		2513	14616
112	0020	0380	31603		2513	14618
112	0030	0379	31600		2513	14619
112	0040	0375	31600		2513	14619
112	0050	0371	31603		2514	14619
112	0075	0023	32523		2612	14481
112	0100	-0005	32913		2645	14478
112	0125	0012	33069		2657	14492

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0390 B	31615		2513	14619	0000	00000	2842
0010	0380	31600		2513	14616	0029	00001	2845
0020	0380	31603		2513	14618	0057	00006	2843
0030	0379	31600		2513	14619	0086	00013	2845
0050	0371	31603		2514	14619	0143	00037	2837
0075	0023	32523		2612	14481	0203	00073	1899
0100	-0005	32913		2645	14478	0246	00112	1588
0125	0012	33069		2657	14492	0285	00157	1476

C-REF-NO 029	YR 1964	DEPTH 66	WAVES 1 3022	AIR T 02.5	VIS 7
CONS. NO 011	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B 02.0	STN
LAT 49-208N	DAY 18	NO.DPTH 7	WND-DIR 300	WW-CODE 70	
LON 58-326W	HR 20.4	W-COLOR	WND-SPD 06	CLD-TPE 5	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 988.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
204	0000	034 B	31569		2514	14597
204	0010	0300	31498		2512	14580
204	0020	0302	31732		2530	14586
204	0030	0294	31830		2539	14585
204	0040	0176	32272		2583	14541
204	0050	0058	32592		2616	14494
204	0060	0041	32832		2636	14491

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340 B	31569		2514	14597	0000	00000	2834
0010	0300	31498		2512	14580	0029	00001	2855
0020	0302	31732		2530	14586	0056	00006	2680
0030	0294	31830		2539	14585	0083	00012	2600
0050	0058	32592		2616	14494	0128	00030	1865

C-REF-NO 029	YR 1964	DEPTH 140	WAVES 1 3022	AIR T 03.0	VIS 7
CONS. NO 012	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B 02.3	STN
LAT 49-350N	DAY 18	NO.DPTH 9	WND-DIR 300	WW-CODE 71	
LUN 58-510W	HR 22.3	W-COLOR	WND-SPD 07	CLD-TPE 5	
MARSD SQ 150	C/I 1810	W-TRNSP	BAKO 988.8	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
223	0000	034 B	31759		2529	14599
223	0010	0308	31751		2531	14587
223	0020	0311	31766		2532	14590
223	0030	0312	31779		2533	14592
223	0039	0311	31783		2534	14594
223	0049	0299	31861		2541	14591
223	0074	-0046	32677		2627	14452
223	0098	-0005	32952		2648	14478
223	0123	0051	33131		2659	14511

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340 B	31759		2529	14599	0000	00000	2690
0010	0308	31751		2531	14587	0027	00001	2670
0020	0311	31766		2532	14590	0054	00005	2661
0030	0312	31779		2533	14592	0081	00012	2653
0050	0286 C	3189 B		2544	14586	0133	00034	2548
0075	-0048 B	32694		2629	14451	0187	00067	1737
0100	-0064 I	3304 F		2658	14453	0227	00103	1465
0125	0069 C	33126		2658	14519	0264	00145	1463

C-REF-NO 029	YR 1964	DEPTH 247	WAVES 1 2922	AIR T 01.5	VIS 7
CONS. NO 013	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B 00.8	STN
LAT 49-490N	DAY 19	NO.DPTH 11	WND-DIR 290	WW-CODE 71	
LON 59-240W	HR 00.8	W-COLOR	WND-SPD 10	CLD-TPE 5	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 990.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0000	035 B	31627		2518	14602
008	0010	0341	31623		2518	14600
008	0020	0344	31617		2517	14602
008	0030	0345	31631		2518	14605
008	0040	0282	31863		2542	14582
008	0050	0154	32260		2583	14533
008	0075	-0017	32638		2623	14465
008	0100	-0006	32854		2640	14477
008	0150	0187	33485		2679	14581
008	0200	0386	34107		2711	14684
008	0240	0447	34396		2728	14720

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	31627		2518	14602	0000	00000	2798
0010	0341	31623		2518	14600	0028	00001	2794
0020	0344	31617		2517	14602	0056	00006	2801
0030	0345	31631		2518	14605	0084	00013	2792
0050	0154	32260		2583	14533	0134	00033	2173
0075	-0017	32638		2623	14465	0184	00064	1793
0100	-0006	32854		2640	14477	0227	00103	1632
0125	0076 E	3315 B		2660	14522	0266	00147	1446
0150	0187	33485		2679	14581	0300	00195	1269
0175	0295 C	3382 B		2697	14636	0330	00245	1108
0200	0386	34107		2711	14684	0357	00295	0977
0225	0421 C	3428 B		2722	14705	0380	00346	0883

C-REF-NO 029	YR 1964	DEPTH 135	WAVES 1 2922	AIR T 01.5	VIS 7
CONS. NO 014	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B 00.8	STN
LAT 50-048N	DAY 19	NO.DPTH 9	WND-DIR 290	WW-CODE 71	
LON 59-550W	HR 03.2	W-COLOR	WND-SPD 09	CLD-TPE 5	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 990.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
032	0000	019 B	31505		2521	14530
032	0010	0173	31493		2521	14524
032	0020	0166	31529		2524	14523
032	0030	0151	31603		2531	14519
032	0040	0147	31613		2532	14519
032	0050	0145	31618		2533	14520
032	0075	0147	31654		2535	14526
032	0100	0141	31692		2539	14528
032	0125	0140	31702		2540	14531

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0190 B	31505		2521	14530	0000	00000	2770
0010	0173	31493		2521	14524	0028	00001	2768
0020	0166	31529		2524	14523	0056	00006	2736
0030	0151	31603		2531	14519	0083	00013	2671
0050	0145	31618		2533	14520	0136	00035	2656
0075	0147	31654		2535	14526	0203	00077	2629
0100	0141	31692		2539	14527	0269	00136	2596
0125	0140	31702		2540	14531	0334	00211	2588

C-REF-NO 029	YR 1964	DEPTH 258	WAVES 1 2921	AIR T 02.4	VIS 7
CONS. NO 015	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B 01.2	STN
LAT 49-450N	DAY 19	NO.DPTH 11	WND-DIR 290	WW-CODE 02	
LON 61-498W	HR 09.0	W-COLOR	WND-SPD 07	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 997.4	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
090	0000	037 B	31747		2525	14612
090	0010	0339	31710		2525	14600
090	0020	0339	31720		2526	14602
090	0030	0340	31732		2527	14604
090	0040	0340	31752		2529	14606
090	0050	0238	31980		2555	14566
090	0075	-0035	32650		2625	14456
090	0099	-0003	32870		2641	14478
090	0149	0112	33327		2672	14545
090	0199	0354	34024		2708	14669
090	0249	0452	34470		2733	14724

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0370 B	31747		2525	14612	0000	00000	2725
0010	0339	31710		2525	14600	0027	00001	2727
0020	0339	31720		2526	14602	0055	00006	2719
0030	0340	31732		2527	14604	0082	00013	2712
0050	0238	31980		2555	14566	0134	00034	2443
0075	-0035	32650		2625	14456	0187	00067	1776
0100	-0002	32878		2642	14479	0230	00105	1616
0125	0045 B	3309 B		2657	14507	0269	00149	1475
0150	0117	33341		2672	14548	0304	00199	1329
0175	0239 F	3369 C		2691	14611	0335	00251	1155
0200	0312 I	3395 G		2706	14650	0363	00303	1022
0225	0384 I	3422 D		2720	14688	0387	00356	0895
*0250	0455	34481		2734	14726	0408	00407	0774

C-REF-NO 029	YR 1964	DEPTH 123	WAVES 1 2821	AIR T 02.4	VIS 7
CONS. NO 016	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B 01.2	STN
LAT 50-030N	DAY 19	NO.DPTH 9	WND-DIR 280	WW-CODE 02	
LON 64-052W	HR 15.6	W-COLOR	WND-SPD 12	CLD-TPE 5	
MARSD SQ 187	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
156	0000	035 B	31418		2501	14599
156	0010	0337	31403		2501	14595
156	0020	0337	31430		2503	14597
156	0030	0315	31630		2521	14592
156	0040	0308	31683		2526	14591
156	0050	0276	31854		2542	14581
156	0075	0104	32392		2597	14516
156	0100	0083	32596		2615	14514
156	0120	0086	32661		2620	14519

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	31418		2501	14599	0000	00000	2956
0010	0337	31403		2501	14595	0030	00002	2957
0020	0337	31430		2503	14597	0059	00006	2937
0030	0315	31630		2521	14592	0088	00013	2768
0050	0276	31854		2542	14581	0142	00035	2568
0075	0104	32392		2597	14516	0200	00072	2042
0100	0083	32596		2615	14514	0249	00115	1874

C-REF-NO 029	YR 1964	DEPTH 121	WAVES 1 2821	AIR T -00.3	VIS 7
CONS. NO 017	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -01.7	STN
LAT 50-020N	DAY 19	NO.DPTH 9	WND-DIR 270	WW-CODE 02	
LON 66-200W	HR 22.0	W-COLOR	WND-SPD 10	CLD-TPE 5	
MARSD SQ 187	C/I 1810	W-TRNSP	BARO 1014.4	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0000	031 B	31369		2501	14581
220	0010	0300	31371		2502	14578
220	0020	0300	31363		2501	14580
220	0030	0341	31523		2510	14602
220	0040	0358	31559		2512	14611
220	0050	0285	31903		2545	14586
220	0075	0165	32253		2582	14542
220	0100	0144	32304		2588	14537
220	0120	0175	32576		2607	14558

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0310 B	31369		2501	14581	0000	00000	2960
0010	0300	31371		2502	14578	0030	00002	2951
0020	0300	31363		2501	14580	0059	00006	2957
0030	0341	31523		2510	14602	0089	00014	2870
0050	0285	31903		2545	14586	0143	00036	2538
0075	0165	32253		2582	14542	0203	00073	2186
0100	0144	32304		2588	14537	0257	00122	2133

C-REF-NO 029	YR 1964	DEPTH 296	WAVES 1 00XX	AIR T 00.8	VIS 7
CONS. NO 018	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -02.2	STN
LAT 49-479N	DAY 19	NO.DPTH 11	WND-DIR 320	WW-CODE 02	
LON 66-200W	HR 23.8	W-COLOR	WND-SPD 08	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
238	0000	025 B	31724		2534	14560
238	0010	0248	31702		2532	14560
238	0020	0249	31719		2533	14563
238	0030	0202	32191		2575	14550
238	0040	0182	32234		2579	14543
238	0050	0153	32294		2586	14533
238	0075	0073	32513		2609	14504
238	0100	0021	32941		2646	14490
238	0150	0156	33413		2676	14566
238	0200	0325	33968		2706	14656
238	0250	0431	34418		2731	14715

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0250 B	31724		2534	14560	0000	00000	2645
0010	0248	31702		2532	14560	0027	00001	2661
0020	0249	31719		2533	14563	0053	00005	2649
0030	0202	32191		2575	14550	0078	00012	2257
0050	0153	32294		2586	14533	0122	00030	2147
0075	0073	32513		2609	14504	0174	00062	1932
0100	0021	32941		2646	14490	0218	00101	1579
0125	0066 F	3320 C		2664	14519	0256	00145	1403
0150	0156	33413		2676	14566	0290	00192	1301
0175	0242 B	33692		2691	14612	0321	00244	1156
0200	0325	33968		2706	14656	0348	00297	1022
0225	0372 C	3418 B		2718	14683	0372	00350	0911
0250	0431	34418		2731	14715	0394	00402	0795

C-REF-NO 029	YR 1964	DEPTH 315	WAVES 1 00XX	AIR T 00.8	VIS 7
CONS. NO 019	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -02.2	STN
LAT 49-358N	DAY 20	NO.DPTH 11	WND-DIR 220	WW-CODE 02	
LON 66-200W	HR 01.7	W-COLOR	WND-SPD 08	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.4	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
017	0000	023 B	31825		2543	14552
017	0010	0192	31795		2544	14537
017	0020	0145	31893		2555	14519
017	0030	0128	31894		2556	14513
017	0040	0117	31944		2560	14510
017	0050	0065	32426		2602	14495
017	0075	0038	32996		2649	14495
017	0100	0122	33254		2665	14540
017	0150	0276	33789		2696	14624
017	0200	0386	34206		2719	14685
017	0250	0450	34515		2737	14724

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0230 B	31825		2543	14552	0000	00000	2554
0010	0192	31795		2544	14537	0026	00001	2551
0020	0145	31893		2555	14519	0051	00005	2447
0030	0128	31894		2556	14513	0075	00011	2436
0050	0065	32426		2602	14495	0120	00029	1995
0075	0038	32996		2649	14495	0165	00057	1546
0100	0122	33254		2665	14540	0202	00090	1398
0125	0203	33527		2681	14584	0235	00128	1248
0150	0276	33789		2696	14624	0265	00170	1110
0175	0337	34012		2709	14657	0291	00214	0999
0200	0386	34206		2719	14685	0315	00260	0903
0225	0423	34375		2729	14707	0337	00307	0817
0250	0450	34515		2737	14724	0357	00355	0743

C-REF-NO 029	YR 1964	DEPTH 318	WAVES 1 00XX	AIR T 00.8	VIS 7
CONS. NO 020	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -02.2	STN
LAT 49-250N	DAY 20	NO.DPTH 12	WND-DIR 220	WW-CODE 02	
LON 66-200W	HR 03.4	W-COLOR	WND-SPD 07	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1016.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
034	0000	028 B	31782		2536	14574
034	0010	0246 B	31745		2536	14560
034	0020	0248 B	31755		2536	14563
034	0030	0246	31765		2537	14564
034	0040	0213	31918		2552	14553
034	0050	0201	32130		2570	14552
034	0075	0208	32811		2624	14569
034	0100	0057	33049		2653	14508
034	0150	0226	33970		2715	14605
034	0200	0367 B	34132		2715	14676
034	0250	0444	34499		2736	14721
034	0300	0467	34645		2745	14741

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0280 B	31782		2536	14574	0000	00000	2624
0010	0246 B	31745		2536	14560	0026	00001	2627
0020	0248 B	31755		2536	14563	0053	00005	2621
0030	0246	31765		2537	14564	0079	00012	2612
0050	0201	32130		2570	14552	0129	00032	2303
0075	0208	32811		2624	14568	0180	00064	1792
0100	0057	33049		2653	14508	0222	00101	1515
0125	0104 I	3352 G		2688	14540	0256	00140	1185
0150	0226	33970		2715	14605	0282	00177	0932
0175	0302	3409 E		2718	14643	0306	00216	0911
0200	0367 B	34132		2715	14676	0329	00261	0939
0225	0413	3432 B		2725	14702	0352	00310	0850
0250	0444	34499		2736	14721	0372	00359	0749
0300	0467	34645		2745	14741	0408	00460	0670

C-REF-NO 029	YR 1964	DEPTH 229	WAVES 1 2220	AIR T -06.0	VIS 7
CONS. NO 021	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B	STN
LAT 49-150N	DAY 20	NO.DPTH 11	WND-DIR 220	WW-CODE 85	
LON 66-200W	HR 05.0	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1014.3	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
050	0000	023 B	31079		2484	14542
050	0010	0235	31559		2522	14553
050	0020	0238	31629		2527	14557
050	0030	0241	31637		2528	14560
050	0040	0240	31652		2529	14561
050	0050	0237	31654		2529	14561
050	0075	0162	32277		2584	14541
050	0100	0026	32680		2625	14489
050	0150	0170	33399		2673	14572
050	0200	0306	33917		2704	14647
050	0225	0332	34010		2709	14663

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0230 B	31079		2484	14542	0000	00000	3121
0010	0235	31559		2522	14553	0030	00001	2760
0020	0238	31629		2527	14557	0057	00006	2709
0030	0241	31637		2528	14560	0084	00013	2705
0050	0237	31654		2529	14561	0139	00035	2690
0075	0162	32277		2584	14541	0200	00073	2165
0100	0026	32680		2625	14489	0249	00117	1780
0125	0064 I	33059		2653	14516	0291	00165	1511
0150	0170	33399		2673	14572	0326	00215	1321
0175	0246 B	3370 B		2692	14614	0358	00266	1154
0200	0306	33917		2704	14647	0385	00319	1043
0225	0332	34010		2709	14663	0411	00376	0999

C-REF-NO 029	YR 1964	DEPTH 320	WAVES 1 0720	AIR T -06.3	VIS 7
CONS. NO 022	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B	STN
LAT 49-110N	DAY 20	NO.DPTH 11	WND-DIR 070	WW-CODE 70	
LGN 67-050W	HR 08.8	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.2	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
088	0000	015 B	30067		2408	14493
088	0010	0125 B	30200		2420	14485
088	0020	0213	31040		2482	14538
088	0030	0235	31740		2536	14558
088	0050	0157	32202		2579	14533
088	0075	0071	32471		2605	14503
088	0100	0046	32762		2630	14499
088	0150	0074	33420		2681	14529
088	0200	0305	33916		2704	14646
088	0250	0405	34319		2726	14703
088	0300	0446	34524		2738	14731

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0150 B	30067		2408	14493	0000	00000	3841
0010	0125 B	30200		2420	14485	0038	00002	3725
0020	0213	31040		2482	14538	0073	00007	3139
0030	0235	31740		2536	14558	0101	00014	2623
0050	0157	32202		2579	14533	0150	00034	2219
0075	0071	32471		2605	14503	0203	00067	1963
0100	0046	32762		2630	14499	0249	00109	1728
0125	0041 B	3310 B		2657	14506	0290	00155	1471
0150	0074	33420		2681	14529	0324	00203	1243
0175	0185 G	33684		2695	14587	0354	00252	1118
0200	0305	33916		2704	14646	0381	00304	1043
0225	0367 B	34136		2715	14680	0406	00359	0938
0250	0405	34319		2726	14703	0428	00413	0842
0300	0446	34524		2738	14731	0468	00525	0737

C-REF-NO 029	YR 1964	DEPTH 287	WAVES 1 0720	AIR T -06.8	VIS 7
CONS. NO 023	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B	STN
LAT 48-550N	DAY 20	NO.DPTH 10	WND-DIR 080	WW-CODE 70	
LON 67-470W	HR 12.8	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 999.8	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
128	0000	018 B	29669		2375	14501
128	0010	0114	29672		2379	14473
128	0020	0142	29877		2394	14490
128	0030	0238	30757		2458	14546
128	0050	0230	31856		2546	14561
128	0075	0049	32559		2614	14494
128	0100	0039	32828		2636	14497
128	0150	0188	33477		2678	14581
128	0200	0318	33956		2706	14653
128	0250	0405	34304		2725	14702

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0180 B	29669		2375	14501	0000	00000	4161
0010	0114	29672		2379	14473	0042	00002	4122
0020	0142	29877		2394	14490	0082	00008	3980
0030	0238	30757		2458	14546	0119	00018	3371
0050	0230	31856		2546	14561	0179	00041	2532
0075	0049	32559		2614	14494	0234	00076	1885
0100	0039	32828		2636	14497	0279	00115	1674
0125	0101 E	3315 B		2658	14534	0318	00161	1461
0150	0188	33477		2678	14581	0353	00209	1276
0175	0257	33735		2694	14619	0383	00259	1136
0200	0318	33956		2706	14652	0411	00312	1025
0225	0363	34152		2717	14679	0435	00365	0923
0250	0405	34304		2725	14702	0457	00420	0853

C-REF-NO 029	YR 1964	DEPTH	349	WAVES 1 0720	AIR T -05.0	VIS 6
CONS. NO 024	MONTH 11	MXSAMPD	03	WAVES 2 00XX	WET B	STN
LAT 48-480N	DAY 20	NO.DPTH	12	WND-DIR 150	WW-CODE 70	
LON 68-160W	HR 14.9	W-COLOR		WND-SPD 06	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 993.6	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
149	0000	016 B	27540		2206	14463
149	0010	0100	27783		2228	14441
149	0020	0142	28841		2311	14476
149	0030	0174	30212		2418	14511
149	0050	0248	31717		2533	14567
149	0075	0058	32585		2615	14498
149	0100	0078	32904		2640	14516
149	0150	0205	33516		2680	14589
149	0200	0317	33901		2702	14651
149	0250	0389	34219		2720	14695
149	0300	0436	34436		2732	14725
149	0340	0441	34466		2734	14735

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0160 B	27540		2206	14463	0000	00000	5775
0010	0100	27783		2228	14441	0057	00003	5560
0020	0142	28841		2311	14476	0109	00011	4771
0030	0174	30212		2418	14511	0151	00021	3743
0050	0248	31717		2533	14567	0216	00046	2650
0075	0058	32585		2615	14498	0273	00082	1870
0100	0078	32904		2640	14516	0317	00121	1637
0125	0135 C	33226		2662	14550	0355	00165	1428
0150	0205	33516		2680	14589	0389	00212	1259
0175	0264	33727		2692	14622	0420	00263	1148
0200	0317	33901		2702	14651	0447	00316	1065
0225	0357	34071		2711	14675	0473	00372	0978
0250	0389	34219		2720	14695	0497	00430	0900
0300	0436	34436		2732	14725	0540	00550	0792

C-REF-NO 029	YR 1964	DEPTH 333	WAVES 1 1220	AIR T 01.5	VIS 7
CONS. NO 025	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B 00.8	STN
LAT 48-380N	DAY 20	NO.DPTH 12	WND-DIR 120	WW-CODE 01	
LON 68-450W	HR 17.2	W-COLOR	WND-SPD 03	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 992.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
172	0000	009 B	28988		2325	14451
172	0010	0145	29645		2375	14487
172	0020	0158	30880		2473	14511
172	0030	0215	31312		2503	14544
172	0050	0204	31948		2555	14551
172	0075	0109	32364		2595	14518
172	0100	0063	32719		2626	14506
172	0150	0173	33362		2670	14573
172	0200	0301	33884		2702	14644
172	0250	0399	34269		2723	14699
172	0300	0439	34469		2734	14727
172	0325	0439	34453		2733	14731

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0090 B	28988		2325	14451	0000	00000	4634
0010	0145	29645		2375	14487	0044	00002	4159
0020	0158	30880		2473	14511	0081	00008	3225
0030	0215	31312		2503	14544	0112	00015	2933
0050	0204	31948		2555	14551	0166	00037	2443
0075	0109	32364		2595	14518	0223	00073	2066
0100	0063	32719		2626	14506	0271	00116	1770
0125	0100 E	33054		2650	14532	0313	00163	1537
0150	0173	33362		2670	14573	0349	00214	1352
0175	0238	33639		2688	14609	0381	00268	1193
0200	0301	33884		2702	14644	0410	00322	1063
0225	0356	34097		2713	14675	0435	00377	0956
0250	0399	34269		2723	14699	0458	00434	0873
0300	0439	34469		2734	14727	0500	00550	0771

C-REF-NO 029	YR 1964	DEPTH 262	WAVES 1 2221	AIR T 01.5	VIS 7
CONS. NO 026	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B 01.2	STN
LAT 48-229N	DAY 20	NO.DPTH 10	WND-DIR 210	WW-CODE 01	
LON 69-100W	HR 19.4	W-COLOR	WND-SPD 11	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 995.4	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	007 B	28683		2302	14438
194	0010	0064	28763		2308	14438
194	0020	0136 B	29885		2395	14487
194	0030	0129	31015		2485	14501
194	0050	0172	31721		2539	14534
194	0075	0079	32506		2608	14507
194	0100	0066	32609		2617	14506
194	0150	0139	33215		2661	14556
194	0200	0316	33964		2707	14652
194	0250	0399	34315		2726	14700

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0070 B	28683		2302	14438	0000	00000	4859
0010	0064	28763		2308	14438	0048	00002	4795
0020	0136 B	29885		2395	14487	0092	00009	3971
0030	0129	31015		2485	14501	0128	00018	3105
0050	0172	31721		2539	14534	0185	00041	2594
0075	0079	32506		2608	14507	0242	00076	1941
0100	0066	32609		2617	14506	0290	00119	1855
0125	0088	3287 B		2636	14524	0335	00170	1669
0150	0139	33215		2661	14556	0374	00225	1439
0175	0227 D	3361 C		2686	14604	0407	00280	1209
0200	0316	33964		2707	14652	0435	00334	1017
0225	0340 G	3411 E		2716	14668	0460	00387	0932
0250	0399	34315		2726	14700	0482	00441	0839

C-REF-NO 029 YR 1964 DEPTH 320 WAVES 1 2021 AIR T 01.5 VIS 7
 CONS. NO 027 MONTH 11 MXSAMPD 03 WAVES 2 00XX WET B 01.0 STN
 LAT 48-156N DAY 20 NO.DPTH 11 WND-DIR 230 WW-CODE 02
 LON 69-227W HR 20.7 W-COLOR WND-SPD 10 CLD-TPE 6
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 996.6 CLD-AMT 5 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
207	0000	014 B	29533		2366	14481
207	0010	0139	29839		2391	14486
207	0020	0212	31361		2508	14541
207	0030	0143	31888		2554	14520
207	0050	0090	32417		2600	14506
207	0075	0057	32731		2627	14500
207	0100	0097	33016		2648	14526
207	0150	0206	33518		2680	14590
207	0200	0322	33989		2708	14655
207	0250	0394	34292		2725	14698
207	0300	0419	34386		2730	14718

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0140 B	29533		2366	14481	0000	00000	4242
0010	0139	29839		2391	14486	0041	00002	4008
0020	0212	31361		2508	14541	0076	00007	2894
0030	0143	31888		2554	14520	0103	00014	2449
0050	0090	32417		2600	14506	0148	00032	2015
0075	0057	32731		2627	14500	0195	00062	1758
0100	0097	33016		2648	14526	0237	00099	1563
0125	0149	33275		2665	14557	0275	00142	1400
0150	0206	33518		2680	14590	0308	00189	1258
0175	0266	33766		2695	14623	0338	00239	1121
0200	0322	33989		2708	14655	0365	00290	1004
0225	0364	34164		2718	14679	0389	00343	0914
0250	0394	34292		2725	14698	0411	00397	0851
0300	0419	34386		2730	14718	0453	00515	0811

C-REF-NO 029	YR 1964	DEPTH 201	WAVES 1 2221	AIR T 02.8	VIS 7
CONS. NO 028	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -00.2	STN
LAT 48-110N	DAY 20	NO.DPTH 9	WND-DIR 240	WW-CODE 02	
LON 69-308W	HR 22.6	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1000.8	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
226	0000	015 B	29366		2352	14483
226	0010	0092	29516		2367	14461
226	0020	0098	29557		2370	14466
226	0030	0182	30531		2443	14518
226	0050	0203	31835		2546	14549
226	0075	0156	32157		2575	14536
226	0099	0084	32825		2633	14517
226	0149	0187	33429		2675	14580
226	0189	0207	33524		2681	14597

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0150 B	29366		2352	14483	0000	00000	4375
0010	0092	29516		2367	14461	0043	00002	4231
0020	0098	29557		2370	14466	0086	00009	4202
0030	0182	30531		2443	14518	0124	00018	3505
0050	0203	31835		2546	14549	0185	00042	2528
0075	0156	32157		2575	14536	0245	00080	2253
0100	0085	32845		2635	14518	0295	00124	1686
0125	0122 I	3324 C		2664	14544	0334	00168	1409
0150	0132 I	3350 F		2684	14557	0367	00215	1216
0175	0173 I	3357 C		2687	14580	0397	00265	1195

C-REF-NO 029	YR 1964	DEPTH 128	WAVES 1 3121	AIR T -00.6	VIS 7
CONS. NO 029	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -02.2	STN
LAT 48-078N	DAY 21	NO.DPTH 7	WND-DIR 310	WW-CODE 02	
LON 69-327W	HR 11.8	W-COLOR	WND-SPD 05	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
118	0000	018 B	30564		2446	14513
118	0010	0115 B	30279		2427	14482
118	0020	0127	30454		2441	14491
118	0030	0126	30557		2449	14494
118	0049	0121	30497		2444	14494
118	0074	0118	31502		2525	14510
118	0099	0094	32916		2640	14523

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0180 B	30564		2446	14513	0000	00000	3480
0010	0115 B	30279		2427	14482	0036	00002	3660
0020	0127	30454		2441	14491	0072	00007	3532
0030	0126	30557		2449	14494	0107	00016	3453
0050	0121	30521		2446	14494	0177	00045	3476
0075	0113 B	3142 I		2518	14507	0256	00094	2789
0100	0093	32994		2646	14524	0310	00142	1578

C-REF-NO 029 YR 1964 DEPTH 230 WAVES 1 00XX AIR T -00.6 VIS 7
 CONS. NO 030 MONTH 11 MXSAMPD 02 WAVES 2 00XX WET B -02.2 STN
 LAT 48-085N DAY 21 NO.DPTH 9 WND-DIR 310 WW-CODE 02
 LON 69-468W HR 13.4 W-COLOR WND-SPD 03 CLD-TPE 4
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1009.3 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
134	0000	013 B	26897		2156	14441
134	0010	0138	27802		2228	14458
134	0020	0146	29131		2334	14482
134	0030	0150	29564		2368	14491
134	0050	0151	30017		2404	14501
134	0075	0150	30196		2419	14507
134	0100	0152	30198		2419	14512
134	0150	0152	30305		2427	14522
134	0200		30344			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0130 B	26897		2156	14441	0000	00000	6253
0010	0138	27802		2228	14458	0059	00003	5563
0020	0146	29131		2334	14482	0110	00010	4551
0030	0150	29564		2368	14491	0154	00022	4223
0050	0151	30017		2404	14501	0235	00055	3878
0075	0150	30196		2419	14507	0331	00115	3740
0100	0152	30198		2419	14512	0425	00200	3739
0125	0151	30247		2423	14516	0519	00307	3700
0150	0152	30305		2427	14522	0611	00437	3656
0175		30313						
0200		30344						

C-REF-NO 029 YR 1964 DEPTH 256 WAVES 1 00XX AIR T -00.6 VIS 7
 CONS. NO 031 MONTH 11 MXSAMPD 02 WAVES 2 00XX WET B -02.2 STN
 LAT 48-177N DAY 21 NO.DPTH 10 WND-DIR 310 WW-CODE 02
 LON 70-142W HR 15.6 W-COLOR WND-SPD 02 CLD-TPE 4
 MARSD SQ 152 C/I 1810 W-TRNSP BARO 1009.3 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
156	0000	001 B	15873		1275	14237
156	0010	0141 B	23739		1903	14405
156	0020	0160	28461		2279	14479
156	0030	0178	29385		2352	14501
156	0050	0184	29995		2400	14515
156	0075	0183	30139		2412	14521
156	0100	0181	30268		2422	14526
156	0150	0171	30492		2441	14533
156	0200	0164	30561		2447	14539
156	0240	0162	30622		2452	14545

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0010 B	15873		1275	14237	0000	00000	14770
0010	0141 B	23739		1903	14405	0117	00004	8681
0020	0160	28461		2279	14479	0186	00014	5070
0030	0178	29385		2352	14501	0233	00026	4375
0050	0184	29995		2400	14515	0316	00059	3914
0075	0183	30139		2412	14521	0413	00121	3803
0100	0181	30268		2422	14526	0508	00205	3703
0125	0176	30393		2433	14530	0600	00311	3605
0150	0171	30492		2441	14533	0689	00437	3526
0175	0167	30536		2445	14536	0777	00584	3489
0200	0164	30561		2447	14539	0865	00752	3468
0225	0163	30614		2451	14543	0952	00940	3426

C-REF-NO 029	YR 1964	DEPTH 249	WAVES 1 00XX	AIR T -03.9	VIS 6
CONS. NO 032	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B	STN
LAT 48-220N	DAY 21	NO. DPTH 10	WND-DIR 250	WW-CODE 85	
LON 70-368W	HR 17.2	W-COLOR	WND-SPD 03	CLD-TPE 4	
MARSD SQ 152	C/I 1810	W-TRNSP	BARO 1009.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
172	0000	015 B	11173		0898	14241
172	0010	0137	22339		1791	14384
172	0020	0181	29115		2330	14497
172	0030	0168	29457		2358	14498
172	0050	0166 B	29940		2397	14507
172	0075	0193	30220		2418	14527
172	0100	0189	30297		2424	14530
172	0150	0135	30494		2443	14517
172	0200	0133	30569		2449	14525
172	0240	0141	30576		2450	14535

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	0150 B	11173		0898	14241	0000	00000	18456
0010	0137	22339		1791	14384	0140	00005	9757
0020	0181	29115		2330	14497	0212	00015	4583
0030	0168	29457		2358	14498	0257	00026	4315
0050	0166 B	29940		2397	14507	0340	00059	3945
0075	0193	30220		2418	14526	0436	00121	3748
0100	0189	30297		2424	14530	0530	00204	3686
0125	0163 C	30400		2434	14524	0621	00309	3591
0150	0135	30494		2443	14517	0710	00435	3502
0175	0130	30544		2448	14519	0798	00580	3460
0200	0133	30569		2449	14525	0885	00747	3442
0225	0133	30583		2451	14529	0971	00935	3431

C-REF-NO 029	YR 1964	DEPTH 333	WAVES 1 00XX	AIR T -03.9	VIS 7
CONS. NO 033	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B	STN
LAT 49-260N	DAY 22	NO.DPTH 13	WND-DIR 250	WW-CODE 70	
LON 65-370W	HR 08.8	W-COLOR	WND-SPD 03	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
088	0000	022 B	31798		2542	14548
088	0010	0207	31773		2541	14543
088	0020	0207	31723		2537	14544
088	0030	0206	31737		2538	14546
088	0040	0207	31754		2539	14548
088	0050	0087	32169		2580	14502
088	0075	-0004	32563		2617	14470
088	0100	0045	32970		2647	14502
088	0150	0222	33571		2683	14597
088	0200	0356	34065		2711	14670
088	0250	0418	34353		2727	14709
088	0300	0459	34583		2741	14737
088	0325	0470	34659		2746	14747

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0220 B	31798		2542	14548	0000	00000	2568
0010	0207	31773		2541	14543	0026	00001	2578
0020	0207	31723		2537	14544	0052	00005	2616
0030	0206	31737		2538	14546	0078	00012	2605
0050	0087	32169		2580	14502	0127	00032	2203
0075	-0004	32563		2617	14470	0178	00064	1856
0100	0045	32970		2647	14502	0221	00102	1569
0125	0130 C	33295		2668	14549	0258	00144	1372
0150	0222	33571		2683	14597	0291	00190	1230
0175	0296	33838		2698	14637	0320	00239	1093
0200	0356	34065		2711	14670	0346	00289	0979
0225	0393	34226		2720	14692	0370	00341	0897
0250	0418	34353		2727	14709	0392	00394	0830
0300	0459	34583		2741	14737	0430	00502	0708

C-REF-NO 029	YR 1964	DEPTH 134	WAVES 1 3025	AIR T -03.4	VIS 7
CONS. NO 034	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -04.8	STN
LAT 49-118N	DAY 22	NO.DPTH 7	WND-DIR 310	WW-CODE 70	
LON 64-473W	HR 11.9	W-COLOR	WND-SPD 12	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1013.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
119	0000	015 B	29780		2385	14489
119	0010	0143	29832		2390	14488
119	0019	0144	29840		2390	14490
119	0029	0158	29989		2402	14500
119	0048	0201	30852		2468	14534
119	0072	0225	31535		2521	14558
119	0097	0089	32665		2620	14517

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0150 B	29780		2385	14489	0000	00000	4059
0010	0143	29832		2390	14488	0041	00002	4016
0020	0145	29847		2391	14491	0081	00008	4005
0030	0160	30028		2405	14502	0120	00018	3875
0050	0207	3091 B		2472	14538	0192	00047	3233
0075	0197 F	3179 I		2543	14550	0265	00092	2556

C-REF-NO 029 YR 1964 DEPTH 360 WAVES 1 3025 AIR T -03.4 VIS 7
 CONS. NO 035 MONTH 11 MXSAMPD 02 WAVES 2 00XX WET B -04.8 STN
 LAT 49-180N DAY 22 NO.DPTH 11 WND-DIR 310 WW-CODE 70
 LON 64-450W HR 13.4 W-COLOR WND-SPD 12 CLD-TPE 4
 MARSD SQ 151 C/I 1810 W-TRNSP . BARO 1013.2 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
134	0000	019 B	30566		2446	14518
134	0010	0179	30691		2456	14516
134	0020	0200	30907		2472	14530
134	0030	0236	31595		2525	14557
134	0040	0233	31684		2532	14558
134	0050	0212	31782		2541	14552
134	0075	0013	32554		2615	14477
134	0100	0021	32842		2638	14489
134	0150	0215	33437		2673	14592
134	0200	0332	33976		2706	14659
134	0250	0410	34293		2724	14704

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0190 B	30566		2446	14518	0000	00000	3484
0010	0179	30691		2456	14516	0035	00002	3382
0020	0200	30907		2472	14530	0068	00007	3231
0030	0236	31595		2525	14557	0098	00014	2734
0050	0212	31782		2541	14552	0151	00036	2575
0075	0013	32554		2615	14477	0207	00071	1871
0100	0021	32842		2638	14489	0251	00110	1654
0125	0108 G	33141		2657	14537	0291	00155	1475
0150	0215	33437		2673	14592	0326	00205	1326
0175	0281	33724		2691	14629	0358	00257	1165
0200	0332	33976		2706	14659	0385	00310	1023
0225	0381	3414 B		2714	14686	0410	00364	0951
0250	0410	34293		2724	14704	0433	00420	0866

C-REF-NO 029	YR 1964	DEPTH 369	WAVES 1 3025	AIR T -03.4	VIS 7
CONS. NO 036	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -04.8	STN
LAT 49-240N	DAY 22	NO.DPTH 13	WND-DIR 310	WW-CODE 70	
LON 64-400W	HR 14.7	W-COLOR	WND-SPD 12	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1013.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
147	0000	015 B	32071		2569	14520
147	0010	0129	32056		2569	14512
147	0020	0129	32053		2568	14514
147	0030	0129	32069		2570	14516
147	0040	0127	32069		2570	14517
147	0050	0124	32098		2572	14517
147	0075	0017	32873		2640	14484
147	0100	0116	33200		2661	14537
147	0150	0272	33775		2695	14622
147	0200	0380	34163		2716	14682
147	0250	0440	34399		2729	14718
147	0300	0467	34625		2744	14741
147	0350	0472	34671		2747	14752

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0150 B	32071		2569	14520	0000	00000	2314
0010	0129	32056		2569	14512	0023	00001	2313
0020	0129	32053		2568	14514	0047	00005	2315
0030	0129	32069		2570	14516	0070	00011	2303
0050	0124	32098		2572	14517	0116	00030	2278
0075	0017	32873		2640	14484	0165	00060	1629
0100	0116	33200		2661	14537	0204	00094	1435
0125	0201	33506		2680	14583	0238	00133	1262
0150	0272	33775		2695	14622	0268	00175	1117
0175	0332	33990		2707	14655	0294	00220	1010
0200	0380	34163		2716	14682	0319	00267	0929
0225	0415	34291		2723	14702	0342	00316	0871
0250	0440	34399		2729	14718	0363	00368	0819
0300	0467	34625		2744	14741	0401	00475	0685

C-REF-NO 029	YR 1964	DEPTH 289	WAVES 1 3025	AIR T -03.4	VIS 7
CONS. NO 037	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B	STN
LAT 49-320N	DAY 22	NO.DPTH 11	WND-DIR 300	WW-CODE 70	
LON 64-300W	HR 16.1	W-COLOR	WND-SPD 15	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
161	0000	018 B	31936		2556	14532
161	0010	0177	31898		2553	14532
161	0019	0177	31904		2553	14533
161	0029	0178	31886		2552	14535
161	0039	0174	31922		2555	14535
161	0048	0173	31957		2558	14537
161	0072	0004	32794		2635	14476
161	0097	0088	33035		2650	14522
161	0145	0218	33578		2684	14595
161	0193	0331	34002		2708	14658
161	0241	0429	34368		2728	14712

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0180 B	31936		2556	14532	0000	00000	2436
0010	0177	31898		2553	14532	0025	00001	2463
0020	0177	31902		2553	14533	0049	00005	2460
0030	0178	31888		2552	14535	0074	00011	2471
0050	0159 C	3202 C		2564	14532	0123	00031	2361
0075	0007 C	3284 B		2638	14479	0173	00062	1650
0100	0097	33069		2652	14527	0213	00098	1523
0125	0167	33353		2670	14566	0250	00140	1354
0150	0231	33626		2687	14602	0282	00185	1195
0175	0291	33853		2700	14635	0310	00232	1076
0200	0347	34070		2712	14666	0336	00282	0966
0225	0398	34259		2722	14695	0359	00332	0877

C-REF-NO 029	YR 1964	DEPTH 141	WAVES 1 2824	AIR T -05.3	VIS 7
CONS. NO 038	MONTH 11	MXSAMPD 01	WAVES 2 2623	WET B	STN
LAT 49-400N	DAY 22	NO.DPTH 9	WND-DIR 290	WW-CODE 01	
LON 64-250W	HR 17.3	W-COLOR	WND-SPD 14	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
173	0000	010 B	32057		2571	14498
173	0010	0133	32049		2568	14514
173	0020	0130	32046		2568	14514
173	0030	0131	32079		2570	14517
173	0040	0128	32074		2570	14517
173	0050	0032	32450		2606	14480
173	0075	-0001	32609		2620	14472
173	0100	-0001	32978		2650	14481
173	0140	0092	33234		2665	14533

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0100 B	32057		2571	14498	0000	00000	2296
0010	0133	32049		2568	14514	0023	00001	2321
0020	0130	32046		2568	14514	0047	00005	2321
0030	0131	32079		2570	14517	0070	00011	2297
0050	0032	32450		2606	14480	0113	00028	1960
0075	-0001	32609		2620	14472	0160	00058	1822
0100	-0001	32978		2650	14481	0203	00096	1540
0125	0046	3311 D		2658	14508	0240	00139	1463

C-REF-NO 029	YR 1964	DEPTH 379	WAVES 1 2825	AIR T -02.2	VIS 7
CONS. NO 039	MONTH 11	MXSAMPD 03	WAVES 2 2623	WET B -03.4	STN
LAT 49-101N	DAY 22	NO.DPTH 13	WND-DIR 290	WW-CODE 70	
LON 63-534W	HR 21.0	W-COLOR	WND-SPD 18	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.8	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
210	0000	022 B	31898		2550	14549
210	0010	0222	31850		2546	14551
210	0019	0223	31850		2546	14553
210	0029	0224	31841		2545	14555
210	0039	0205	31902		2551	14549
210	0048	0139	32264		2585	14526
210	0072	0017	32658		2623	14480
210	0097	0013	32957		2647	14486
210	0145	0220	33627		2688	14596
210	0193	0376	34219		2721	14680
210	0241	0444	34449		2732	14719
210	0290	0461	34650		2746	14737
210	0338	0468	34759		2754	14749

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0220 B	31898		2550	14549	0000	00000	2492
0010	0222	31850		2546	14551	0025	00001	2530
0020	0224	31848		2546	14553	0051	00005	2533
0030	0224	31837		2545	14555	0076	00012	2541
0050	0125	3232 B		2590	14521	0123	00031	2114
0075	0011	32696		2627	14478	0172	00061	1761
0100	0023 B	32998		2650	14492	0213	00098	1536
0125	0120 G	33345		2673	14545	0249	00139	1328
0150	0239	33699		2692	14607	0281	00183	1148
0175	0326	3402 B		2710	14653	0307	00228	0980
0200	0390	34265		2723	14687	0331	00272	0863
0225	0429	3439 B		2730	14710	0352	00318	0808
0250	0449	34491		2735	14724	0372	00366	0761
0300	0471 B	34670		2747	14743	0407	00467	0656

C-REF-NO 029	YR 1964	DEPTH 384	WAVES 1 2824	AIR T -03.2	VIS 7
CONS. NO 040	MONTH 11	MXSAMPD 03	WAVES 2 2623	WET B -04.8	STN
LAT 48-570N	DAY 23	NO.DPTH 13	WND-DIR 280	WW-CODE 70	
LON 63-055W	HR 00.6	W-COLOR	WND-SPD 15	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.2	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
006	0000	024 B	32036		2559	14560
006	0009	0220	31841		2545	14550
006	0018	0220	31835		2545	14551
006	0027	0198	31939		2555	14544
006	0036	0168	32018		2563	14534
006	0045	0074	32296		2591	14497
006	0068	0000	32747		2631	14473
006	0091	0041	32946		2645	14498
006	0136	0233	33586		2684	14600
006	0181	0341	34004		2707	14660
006	0227	0406	34270		2722	14699
006	0272	0449	34481		2734	14727
006	0317	0466	34738		2753	14745

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	0240 B	32036		2559	14560	0000	00000	2402
0010	0220	31833		2545	14550	0025	00001	2541
0020	0216	31854		2547	14550	0050	00005	2523
0030	0192	31956		2557	14542	0075	00012	2429
0050	0043 B	32421		2603	14485	0120	00029	1988
0075	0004 B	3282 B		2637	14477	0166	00058	1666
0100	0077 C	3307 B		2653	14518	0206	00094	1511
0125	0183 D	3342 B		2675	14574	0241	00135	1311
0150	0273	33736		2692	14622	0279	00178	1148
0175	0330	33959		2705	14654	0300	00224	1032
0200	0372	34127		2714	14678	0325	00272	0948
0225	0404	34261		2722	14697	0348	00322	0882
0250	0431	34378		2728	14714	0369	00374	0825
0300	0462	34647		2746	14739	0407	00479	0653

C-REF-NO 029	YR 1964	DEPTH 380	WAVES 1 2825	AIR T -03.2	VIS 7
CONS. NO 041	MONTH 11	MXSAMPD 03	WAVES 2 2623	WET B -04.8	STN
LAT 48-430N	DAY 23	NO.DPTH 13	WND-DIR 270	WW-CODE 70	
LON 62-190W	HR 03.5	W-COLOR	WND-SPD 14	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.3	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
035	0000	031 B	31607		2520	14584
035	0010	0322	31616		2519	14591
035	0020	0322	31611		2519	14593
035	0030	0322	31622		2520	14595
035	0040	0298	31711		2529	14587
035	0050	0283	31746		2533	14583
035	0075	-0022	32627		2622	14462
035	0100	0031	32848		2638	14494
035	0150	0184	33499		2680	14580
035	0200	0373	34101		2712	14678
035	0250	0449	34416		2729	14722
035	0300	0470	34634		2744	14742
035	0350	0459	34754		2755	14748

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0310 B	31607		2520	14584	0000	00000	2780
0010	0322	31616		2519	14591	0028	00001	2783
0020	0322	31611		2519	14593	0056	00006	2788
0030	0322	31622		2520	14595	0084	00013	2780
0050	0283	31746		2533	14583	0139	00035	2655
0075	-0022	32627		2622	14462	0195	00070	1799
0100	0031	32848		2638	14494	0238	00109	1655
0125	0101	3316 B		2659	14534	0277	00153	1457
0150	0184	33499		2680	14580	0312	00201	1256
0175	0283 C	33821		2698	14632	0341	00251	1094
0200	0373	34101		2712	14678	0367	00300	0968
0225	0422	34283		2722	14705	0391	00351	0884
0250	0449	34416		2729	14722	0412	00403	0816
0300	0470	34634		2744	14742	0450	00509	0682

C-REF-NO 029	YR 1964	DEPTH 47	WAVES 1 2823	AIR T -05.2	VIS 7
CONS. NO 042	MONTH 11	MXSAMPD 00	WAVES 2 2624	WET B -06.3	STN
LAT 48-200N	DAY 23	NO.DPTH 5	WND-DIR 280	WW-CODE 02	
LON 63-100W	HR 07.2	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1022.6	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
072	0000	021 B	31508		2519	14539
072	0010	0185	31474		2519	14529
072	0020	0185	31480		2519	14531
072	0030	0187	31462		2517	14533
072	0040	0199	31552		2524	14542

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0210 B	31508		2519	14539	0000	00000	2781
0010	0185	31474		2519	14529	0028	00001	2790
0020	0185	31480		2519	14531	0056	00006	2786
0030	0187	31462		2517	14533	0084	00013	2801

C-REF-NO 029	YR 1964	DEPTH 64	WAVES 1 2220	AIR T -04.0	VIS 7
CONS. NO 043	MONTH 11	MXSAMPD 00	WAVES 2 3633	WET B -05.3	STN
LAT 47-500N	DAY 23	NO.DPTH 6	WND-DIR 250	WW-CODE 03	
LON 62-500W	HR 18.7	W-COLOR	WND-SPD 08	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1026.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
187	0000	023 B	31363		2506	14546
187	0010	0210	31309		2504	14538
187	0020	0201	31426		2514	14537
187	0030	0204	31418		2513	14540
187	0040	0203	31492		2519	14543
187	0050	0201	31556		2524	14544

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0230 B	31363		2506	14546	0000	00000	2905
0010	0210	31309		2504	14538	0029	00002	2932
0020	0201	31426		2514	14537	0058	00006	2837
0030	0204	31418		2513	14540	0087	00013	2846
0050	0201	31556		2524	14544	0143	00036	2739

C-REF-NO 029	YR 1964	DEPTH 60	WAVES 1 2422	AIR T -04.2	VIS 7
CONS. NO 044	MONTH 11	MXSAMPD 00	WAVES 2 3633	WET B -06.1	STN
LAT 47-108N	DAY 23	NO.DPTH 6	WND-DIR 240	HW-CODE 03	
LON 63-100W	HR 22.0	W-COLOR	WND-SPD 11	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1025.8	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0000	032 B	30961		2467	14580
220	0010	0312	30957		2468	14578
220	0020	0312	30894		2463	14579
220	0030	0312	30933		2466	14581
220	0040	0312	30865		2460	14582
220	0050	0314	30918		2464	14585

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0320 B	30961		2467	14580	0000	00000	3277
0010	0312	30957		2468	14578	0033	00002	3274
0020	0312	30894		2463	14579	0066	00007	3322
0030	0312	30933		2466	14581	0099	00015	3293
0050	0314	30918		2464	14585	0166	00043	3306

C-REF-NO 029	YR 1964	DEPTH 2780	WAVES 1 00XX	AIR T -01.0	VIS 7
CONS. NO 045	MONTH 11	MXSAMPD 10	WAVES 2 0921	WET B	STN
LAT 42-310N	DAY 25	NO.DPTH 15	WND-DIR 130	WW-CODE 02	
LON 61-240W	HR 07.7	W-COLOR	WND-SPD 01	CLD-TPE 2	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1034.9	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
077	0000	075 B	32751		2560	14781
077	0010	0756	32668		2553	14783
077	0020	0755	32675		2554	14785
077	0030	0756	32673		2553	14787
077	0050	0646	33144		2605	14753
077	0075	0196 B	33453		2676	14572
077	0100	0566	34263		2703	14744
077	0150	0623	34583		2721	14779
077	0200	0607 B	34635		2728	14782
077	0300	0613	34782		2738	14802
077	0400	0500	34874		2760	14774
077	0499	0451	34852		2764	14770
077	0598	0448	34907		2768	14786
077	0794	0421	34929		2773	14808
077	0992	0395	34831		2768	14828

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D.	POT.EN	SVA
0000	0750 B	32751		2560	14781	0000	00000	2393
0010	0756	32668		2553	14783	0024	00001	2465
0020	0755	32675		2554	14785	0049	00005	2460
0030	0756	32673		2553	14787	0074	00011	2464
0050	0646	33144		2605	14753	0119	00029	1973
0075	0196 B	33453		2676	14572	0160	00055	1298
0100	0566	34263		2703	14744	0189	00081	1047
0125	0656 I	3455 H		2714	14788	0215	00110	0949
0150	0623	34583		2721	14779	0238	00142	0885
0175	0619 B	3463 B		2725	14782	0260	00179	0852
0200	0607 B	34635		2728	14782	0281	00219	0833
0225	0612 C	34672		2730	14788	0302	00265	0815
0250	0614 D	34708		2733	14794	0322	00314	0794
0300	0613	34782		2738	14802	0361	00424	0745
0400	0500	34874		2760	14774	0426	00654	0549
0500	0451	34852		2764	14770	0480	00903	0519
0600	0448	34908		2768	14786	0531	01189	0485
0700	0436	34933		2772	14798	0579	01508	0462
0800	0425 B	34927		2772	14810	0625	01870	0464
1000	0394	34825		2767	14829	0725	02800	0521

C-REF-NO 029	YR 1964	DEPTH 1207	WAVES 1 00XX	AIR T -01.0	VIS 7
CONS. NO 046	MONTH 11	MXSAMPD 10	WAVES 2 0921	WET B	STN
LAT 42-500N	DAY 25	NO.DPTH 15	WND-DIR 130	WW-CODE 02	
LON 61-450W	HR 10.2	W-COLOR	WND-SPD 01	CLD-TPE 2	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1034.6	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
102	0000	056 B	32439		2560	14701
102	0010	0545	32253		2547	14694
102	0020	0542 B	32335		2554	14695
102	0030	0541	32336		2554	14696
102	0050	0451	32390		2568	14663
102	0075	0439	32850		2606	14668
102	0100	0089 B	33347		2675	14527
102	0150	0540	34284		2708	14742
102	0200	0625	34547		2718	14788
102	0300	0538	34726		2743	14771
102	0399	0447	34789		2759	14751
102	0498	0444	34872		2766	14767
102	0598	0446	34925		2770	14785
102	0796	0407	34933		2775	14802
102	0993	0393	34928		2776	14829

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0560 B	32439		2560	14701	0000	00000	2394
0010	0545	32253		2547	14694	0025	00001	2518
0020	0542 B	32335		2554	14695	0050	00005	2454
0030	0541	32336		2554	14696	0074	00011	2453
0050	0451	32390		2568	14663	0122	00031	2320
0075	0439	32850		2606	14668	0176	00065	1964
0100	0089 B	33347		2675	14527	0218	00101	1307
0125	0241 I	3386 C		2705	14606	0247	00134	1025
0150	0540	34284		2708	14742	0273	00170	1007
0175	0611 F	3447 C		2714	14777	0297	00212	0961
0200	0625	34547		2718	14788	0321	00257	0921
0225	0620 E	3462 B		2725	14791	0344	00306	0864
0250	0603 G	3467 B		2731	14789	0365	00358	0807
0300	0538	34726		2743	14771	0402	00464	0693
0400	0447	34790		2759	14751	0465	00686	0550
0500	0444	34872		2766	14768	0518	00929	0496
0600	0446	34925		2770	14786	0567	01254	0469
0700	0428 B	34938		2773	14795	0613	01514	0449
0800	0419 D	3495 B		2775	14808	0658	01861	0440
1000	0392	34926		2776	14830	0748	02691	0444

C-REF-NO 029 YR 1964 DEPTH 93 WAVES 1 00XX AIR T -01.0 VIS 7
 CONS. NO 047 MONTH 11 MXSAMPD 01 WAVES 2 0921 WET B STN
 LAT 43-110N DAY 25 NO.DPTH 7 WND-DIR 130 WW-CODE 02
 LON 62-060W HR 12.7 W-COLOR WND-SPD 02 CLD-TPE 2
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1034.6 CLD-AMT 5 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
127	0000	066 B	32034		2516	14736
127	0010	0666	32025		2515	14740
127	0020	0666 B	32030		2515	14741
127	0030	0667	32030		2515	14743
127	0050	0662	32116		2522	14746
127	0075	0316	33147		2642	14620
127	0090	0481 B	33736		2672	14700

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0660 B	32034		2516	14736	0000	00000	2814
0010	0666	32025		2515	14740	0028	00001	2829
0020	0666 B	32030		2515	14741	0057	00006	2827
0030	0667	32030		2515	14743	0085	00013	2829
0050	0662	32116		2522	14746	0142	00036	2761
0075	0316	33147		2642	14620	0197	00070	1625

C-REF-NO 029	YR 1964	DEPTH 77	WAVES 1 1720	AIR T 03.8	VIS 7
CONS. NO 048	MONTH 11	MXSAMPD 01	WAVES 2 2441	WET B 02.0	STN
LAT 43-290N	DAY 25	NO.DPTH 6	WND-DIR 160	WW-CODE 03	
LON 62-270W	HR 14.6	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1032.1	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
146	0000	069 B	31915		2503	14746
146	0010	0689	31921		2503	14747
146	0020	0698	31956		2505	14753
146	0030	0710	32025		2509	14760
146	0050	0540	33386		2637	14713
146	0070	0514	33547		2653	14708

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0690 B	31915		2503	14746	0000	00000	2940
0010	0689	31921		2503	14747	0030	00002	2936
0020	0698	31956		2505	14753	0059	00006	2922
0030	0710	32025		2509	14760	0088	00014	2887
0050	0540	33386		2637	14713	0134	00031	1667

C-REF-NO 029	YR 1964	DEPTH 260	WAVES 1 1621	AIR T 05.6	VIS 7
CONS. NO 049	MONTH 11	MXSAMPD 02	WAVES 2 2441	WET B 03.8	STN
LAT 43-530N	DAY 25	NO.DPTH 10	WND-DIR 150	WW-CODE 02	
LON 62-520W	HR 17.3	W-COLOR	WND-SPD 09	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1029.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
173	0000	059 B	31531		2485	14701
173	0010	0701	31497		2469	14747
173	0020	0685	31506		2471	14742
173	0030	0700	31507		2469	14750
173	0050	0536	32590		2575	14701
173	0075	0320	33241		2649	14623
173	0100	0481	33792		2676	14703
173	0150	0651	34404		2704	14788
173	0200	0615	34454		2712	14782
173	0250	0558	34415		2716	14767

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0590 B	31531		2485	14701	0000	00000	3109
0010	0701	31497		2469	14747	0032	00002	3267
0020	0685	31506		2471	14742	0065	00007	3242
0030	0700	31507		2469	14750	0097	00015	3261
0050	0536	32590		2575	14701	0153	00037	2259
0075	0320	33241		2649	14623	0201	00066	1557
0100	0481	33792		2676	14703	0237	00098	1303
0125	0592	34174		2693	14757	0268	00134	1147
0150	0651	34404		2704	14788	0296	00173	1054
0175	0647 D	3447 C		2709	14791	0322	00216	1004
0200	0615	34454		2712	14782	0347	00264	0978
0225	0616 F	3452 D		2717	14788	0371	00317	0937
0250	0558	34415		2716	14767	0394	00374	0943

C-REF-NO 029	YR 1964	DEPTH 159	WAVES 1 1621	AIR T 05.8	VIS 8
CONS. NO 050	MONTH 11	MXSAMPD 01	WAVES 2 2441	WET B 03.6	STN
LAT 44-160N	DAY 25	NO.DPTH 8	WND-DIR 150	WW-CODE 02	
LON 63-190W	HR 20.0	W-COLOR	WND-SPD 08	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1029.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
200	0000	065 B	31089		2443	14719
200	0010	0656	31004		2436	14722
200	0020	0654	31009		2436	14723
200	0030	0654	31013		2437	14725
200	0050	0655	31376		2465	14733
200	0075	0537 B	31810		2513	14695
200	0100	0231	32463		2594	14578
200	0125	0209	32800		2623	14577

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0650 B	31089		2443	14719	0000	00000	3509
0010	0656	31004		2436	14722	0036	00002	3581
0020	0654	31009		2436	14723	0072	00007	3576
0030	0654	31013		2437	14725	0108	00017	3574
0050	0655	31376		2465	14733	0177	00045	3306
0075	0537 B	31810		2513	14695	0254	00093	2847
0100	0231	32463		2594	14578	0316	00148	2074
0125	0209	32800		2623	14577	0365	00204	1803

C-REF-NO 029	YR 1964	DEPTH	84	WAVES 1 1621	AIR T 06.0	VIS 8
CONS. NO 051	MONTH 11	MXSAMPD	01	WAVES 2 2441	WET B 04.0	STN
LAT 44-240N	DAY 25	NO.DPTH	6	WND-DIR 150	WW-CODE 02	
LON 63-280W	HR 21.3	W-COLOR		WND-SPD 05	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1029.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
213	0000	064 B	31092		2444	14715
213	0010	0639	31016		2439	14716
213	0020	0637	31073		2443	14717
213	0030	0642	31076		2443	14721
213	0050	0629	31355		2467	14723
213	0075	0553	31692		2502	14700

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0640 B	31092		2444	14715	0000	00000	3495
0010	0639	31016		2439	14716	0035	00002	3552
0020	0637	31073		2443	14717	0071	00007	3508
0030	0642	31076		2443	14721	0106	00016	3513
0050	0629	31355		2467	14722	0175	00044	3290
0075	0553	31692		2502	14700	0253	00094	2953

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CANADA

Gouvernement
Publications



**GULF OF ST. LAWRENCE,
HALIFAX SECTION,
and SCOTIAN SHELF to GRAND BANKS**
Three Surveys

November 20 to December 22, 1965

No. 10

1966 Data Record Series

Canadian Oceanographic Data Centre

**Programmed by the
Canadian Committee on Oceanography**

1966

GULF OF ST. LAWRENCE, HALIFAX SECTION, and SCOTIAN SHELF to GRAND BANKS

Three Surveys

November 20 to December 22, 1965

**CODC Reference: 10-65-002
10-65-003
10-65-004**

No. 10

1966 Data Record Series

**Canadian Oceanographic Data Centre
615 Booth St., Ottawa, Canada**

Programmed by the Canadian Committee on Oceanography

PART 1

by

CSS "Baffin"

(CODC Reference: 10-65-002)

DEPARTMENT OF ENERGY, MINES AND RESOURCES

MARINE SCIENCES BRANCH

GULF OF ST. LAWRENCE

Ship:	CSS "Baffin"
Local cruise designation:	BIO 3665
Cruise period:	November 20 - November 26, 1965
Observers:	T. R. Foote
	E. A. Lewis
	W. A. Warshick
	G. T. Gibson
	C. Cunningham

BEDFORD INSTITUTE OF OCEANOGRAPHY, Dartmouth, N. S.

SECTION I

Description of data collection procedures

"BAFFIN"

Canadian Hydrographic Service

TRACK CHART

GULF OF ST. LAWRENCE ICE FORECAST CRUISE - BIO 3665 BAFFIN - NOV 65

C.S.S. BAFFIN

—O— B.T. & OCEANOGRAPHIC STATIONS TO BOTTOM, TEMPS & SALTS AT STANDARD & 40 M. DEPTHS

Q U E B E C

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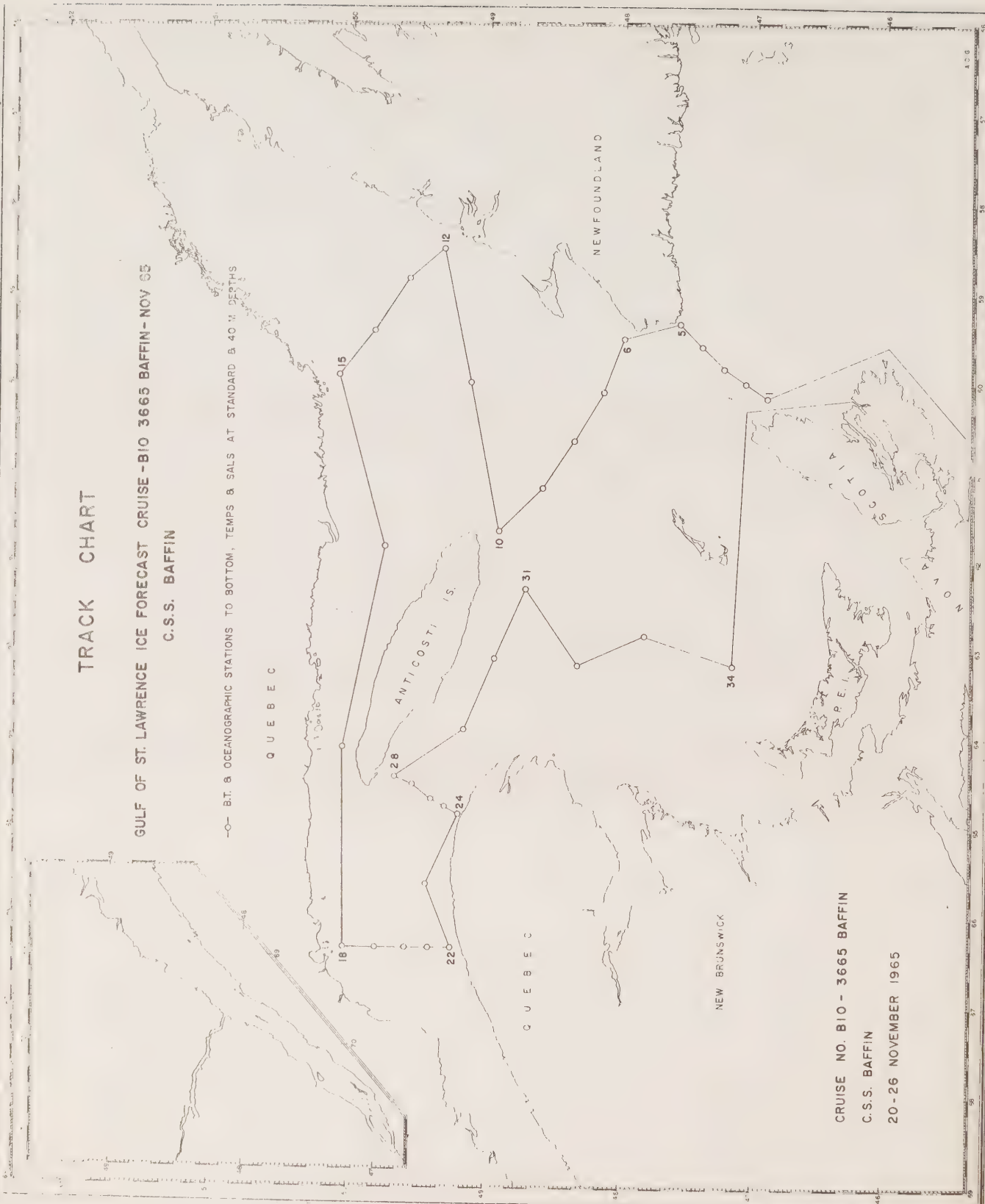
NEWFOUNDLAND

NEW BRUNSWICK

CRUISE NO. BIO - 3665 BAFFIN

C.S.S. BAFFIN

20-26 NOVEMBER 1965



INTRODUCTION

The purpose of the cruise was to collect temperature and salinity data in the upper 250 metres at representative stations throughout the Gulf of St. Lawrence, in order to provide information to assist Ice Forecast Central, Department of Transport, in the preparation of their ice forecast for the 1965 - 1966 winter season in the Gulf.

EXTRACT OF CRUISE LOG

Depart Bedford Institute of Oceanography	20 November 1965
Arrive Sydney, N. S.	26 November 1965

OBSERVATIONAL PROCEDURES

Temperature and salinity data were collected in single casts at 34 stations throughout the Gulf of St. Lawrence. Standard sampling procedures and depths were used with an additional depth at 40 metres, as requested by Ice Central. Two Richter and Wiese protected thermometers were used on Knudsen type sampling bottles and one unprotected thermometer was used on bottles at 200 metres and deeper.

Water depths were obtained with Alden 411-PGR.

Water samples were measured for salinity on board by the conductivity bridge method after Brown and Hamon. Duplicate sets of samples from three stations were brought back to the Bedford Institute of Oceanography for salinity determinations on one of the NIO salinometers.

Bathythermograph lowerings were made to a maximum depth of 275 metres at each station prior to the bottle cast. The bathythermograph data were processed at the Canadian Oceanographic Data Centre.

PERSONNEL

At Sea:

T. R. Foote	Officer-in-Charge
E. A. Lewis	
W. G. Warshick	
G. T. Gibson	
C. Cunningham	
T. A. Grant	
D. M. Leahy	

Data Analyses

Compilation of Data	T. R. Foote
Salinity determinations	W. G. Warshick

SECTION 11

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "estimate of precision" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; first, to give an indication of the quality of the interpolated data; second, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "measurement error estimate" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

1 IDENT. CODE		2 LATITUDE (N=+)		3 LONGITUDE (W=+)		4 DATE		5 TIME		6 DEPTH		7 NO. DEPTHS OBS'D.		8 VESSEL											
COUNTRY INST.		DEG. MIN.		DEG. MIN.		YEAR MONTH DAY		HOURS G.M.T.		TO BOTTOM		ENTERED BY		CHECKED BY											
1 2 3 4		5 6 7 8 9		10 11 12 13 14 15		16 17 18 19 20 21 22 23 24		25 26 27 28 29 30 31		32 33 34 35															
WATER		WAVES I		WAVES II		WIND		WET BULB		W.W. CODE		VIS		UNASSIGNED											
COLOUR TRANS.		DW BW PWHW DW GW PW HW		DIR.		BAROMETER		AIR TEMP.		(98PT. 62)		HOURS AFTER H.W.		CRUISE REFERENCE NUMBER											
10		11		12		13		14		15		16		17											
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80		6 TIME HOURS G.M.T.		7 DEPTH OF SAMPLE		8 TEMPERATURE		9 SALINITY		10 OXYGEN		13 PO ₄ -P		14 TOTAL - P		15 NO. - N		16 NO. - N		17 SIO ₃ - SI		18 P.H.		24	
1		2		3		4		5		6		7		8		9		10		11		12			
3		4		5		6		7		8		9		10		11		12		13		14			
5		6		7		8		9		10		11		12		13		14		15		16			
7		8		9		10		11		12		13		14		15		16		17		18			
9		10		11		12		13		14		15		16		17		18		19		20			
11		12		13		14		15		16		17		18		19		20		21		22			
13		14		15		16		17		18		19		20		21		22		23		24			
15		16		17		18		19		20		21		22		23		24		25		26			
17		18		19		20		21		22		23		24		25		26		27		28			
19		20		21		22		23		24		25		26		27		28		29		30			
21		22		23		24		25		26		27		28		29		30		31		32			
23		24		25		26		27		28		29		30		31		32		33		34			
25		26		27		28		29		30		31		32		33		34		35		36			
27		28		29		30		31		32		33		34		35		36		37		38			
29		30		31		32		33		34		35		36		37		38		39		40			
31		32		33		34		35		36		37		38		39		40		41		42			
33		34		35		36		37		38		39		40		41		42		43		44			
35		36		37		38		39		40		41		42		43		44		45		46			
37		38		39		40		41		42		43		44		45		46		47		48			
39		40		41		42		43		44		45		46		47		48		49		50			
41		42		43		44		45		46		47		48		49		50		51		52			
43		44		45		46		47		48		49		50		51		52		53		54			
45		46		47		48		49		50		51		52		53		54		55		56			
47		48		49		50		51		52		53		54		55		56		57		58			
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51		52		53		54		55		56		57		58		59		60		61		62			
53		54		55		56		57		58		59		60		61		62		63		64			
55		56		57		58		59		60		61		62		63		64		65		66			
57		58		59		60		61		62		63		64		65		66		67		68			
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65		66		67		68		69		70		71		72		73		74		75		76			
67		68		69		70		71		72		73		74		75		76		77		78			
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71		72		73		74		75		76		77		78		79		80		81		82			
73		74		75		76		77		78		79		80		81		82		83		84			
75		76		77		78		79		80		81		82		83		84		85		86			
77		78		79		80		81		82		83		84		85		86		87		88			
79		80		81		82		83		84		85		86		87		88		89		90			
81		82		83		84		85		86		87		88		89		90		91		92			
83		84		85		86		87		88		89		90		91		92		93		94			
85		86		87		88		89		90		91		92		93		94		95		96			
87		88		89		90		91		92		93		94		95		96		97		98			
89		90		91		92		93		94		95		96		97		98		99		100			
91		92		93		94		95		96		97		98		99		100		101		102			
93		94		95		96		97		98		99		100		101		102		103		104			
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97		98		99		100		101		102		103		104		105		106		107		108			
99		100		101		102		103		104		105		106		107		108		109		110			
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103		104		105		106		107		108		109		110		111		112		113		114			
105		106		107		108		109		110		111		112		113		114		115		116			
107		108		109		110		111		112		113		114		115		116		117		118			
109		110		111		112		113		114		115		116		117		118		119		120			
111		112		113		114		115		116		117		118		119		120		121		122			
113		114		115		116		117		118		119		120		121		122		123		124			
115		116		117		118		119		120		121		122		123		124		125		126			
117		118		119		120		121		122		123		124		125		126		127		128			
119		120		121		122		123		124		125		126		127		128		129		130			
121		122		123		124		125		126		127		128		129		130		131		132			
123		124		125		126		127		128		129		130		131		132		133		134			
125		126		127		128		129		130		131		132		133		134		135		136			
127		128		129		130		131		132		133		134		135		136		137		138			
129		130		131		132		133		134		135		136		137		138		139		140			
131		132		133		134		135		136		137		138		139		140		141		142			
133		134		135		136		137		138		139		140		141		142		143		144			
135		136		137		138		139		140		141		142		143		144		145		146			
137		138		139		140		141		142		143		144		145		146		147		148			
139		140		141		142		143		144		145		146		147		148		149		150			
141		142		143		144		145		146		147		148		149		150		151		152			
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147		148		149		150		151		152		153		154		155		156		157		158			
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159		160		161		162		163		164		165		166		167		168		169		170			
161		162		163		164		165		166		167		168		169		170		171		172			
163		164		165		166		167		168		169		170		171		172		173		174			
165		166		167		168		169		170		171		172		173		174		175		176			
167		168		169		170		171		172		173		174		175		176		177		178			
169		170		171		172		173		174		175		176		177		178		179		180			
171		172		173		174		175		176		177		178		179		180		181		182			
173		174		175		176		177		178		179		180		181		182		183		184			
175		176		177		178		179		180		181		18											

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

- σ = Standard deviation of the combined error estimates at standard oceanographic depth,
- ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (\bar{V}_{i_1} - V_{i_2})$
- γ = Interpolation polynomial coefficient.
- Z_j = Observed depth.
- Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the combined measurement and interpolation error estimate. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the interpolation error estimate is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFERENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.

(2) CONSECUTIVE NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation.

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_W d_W P_W H_W$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_W d_W P_W H_W$ -code): The direction, period and height of the predominant **non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WIND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WIND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_3
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01°C . Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 \text{ C1\%}$, reported in:
a. 1/100 parts per 1000, or
b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

- (8) PO_4 Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
- (9) -P- Total Phosphorus reported to hundredths of microgram-atoms per litre.
- (10) NO_2 Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre -- No dissolved nitrogen included --
- (11) NO_3 Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
- (12) SiO_2 Silicate-Silicon reported in whole microgram-atoms per litre.
- (13) pH The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

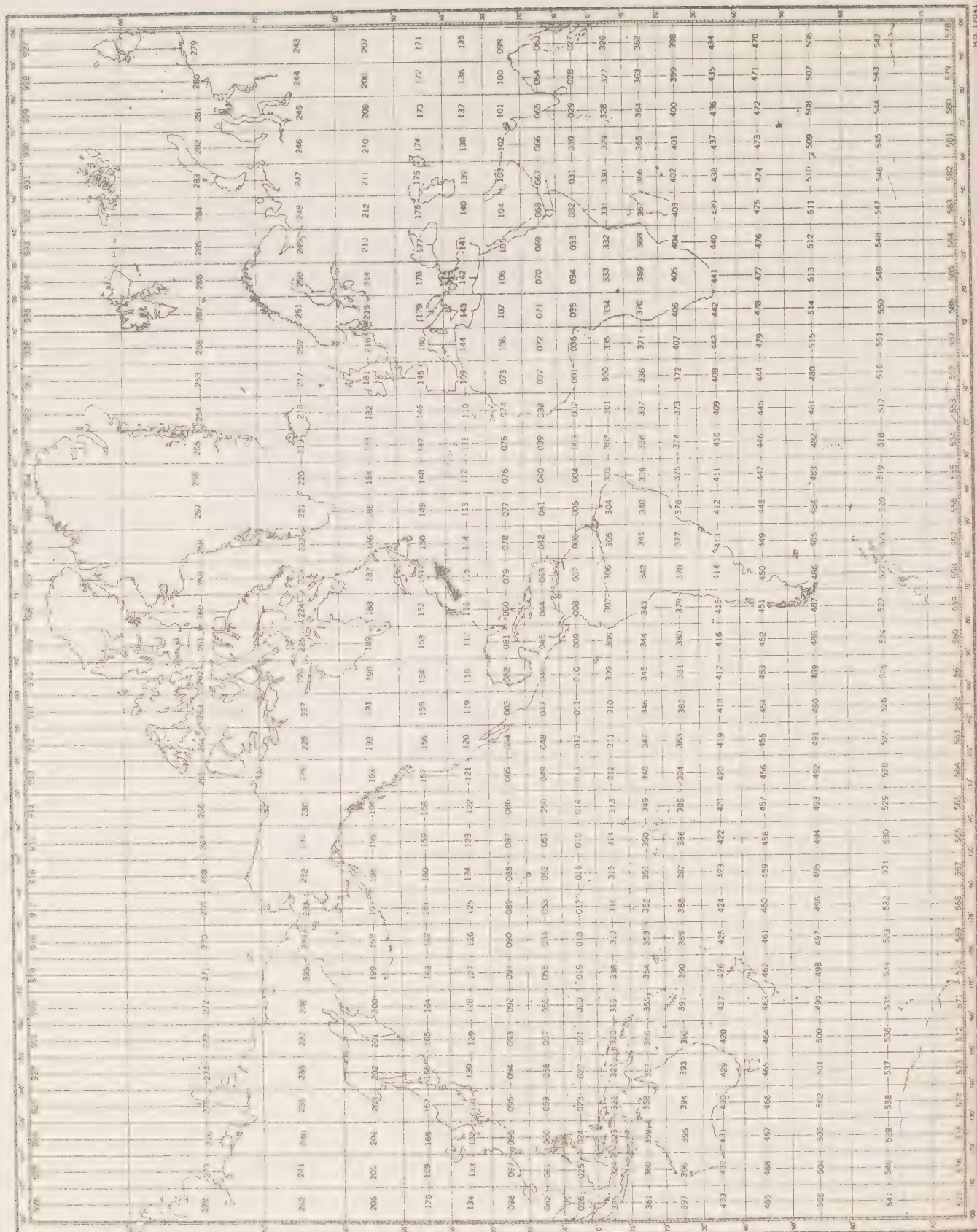
- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY: A. The reported salinity values are measured to three decimal places.
 (i) the interpolation error estimate is less than twice the standard deviation of measurement
 --the interpolated value is reported to three decimal places (e.g., 30.139).
 (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 --the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 --the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^P \delta dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = 1/g \int_0^P p \delta dp = \int_0^Z \rho p \delta dz$$
- χ is expressed in units of 10^6 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.p}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

* (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.



MARSDEN SQUARE CHART

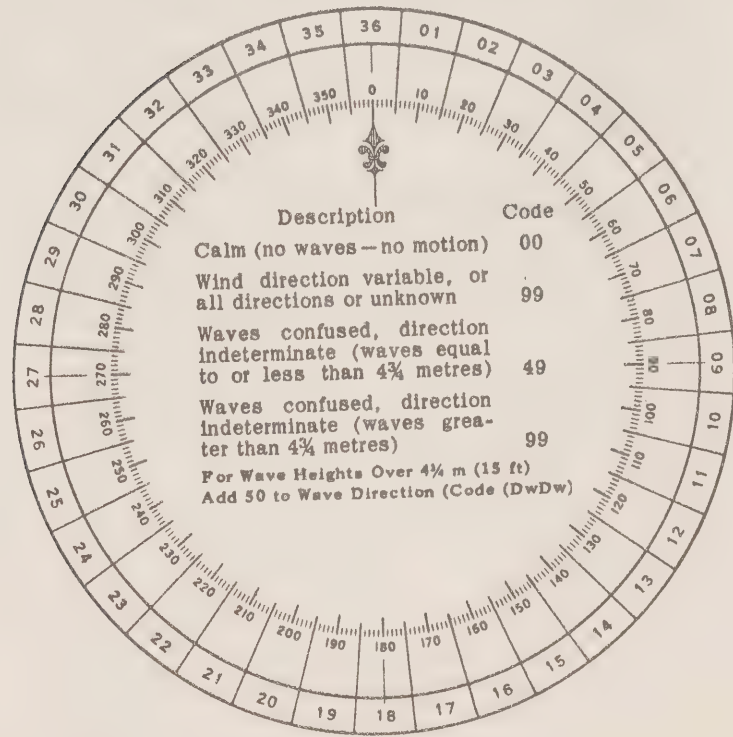
Table 1
CONVERSION
MINUTES TO 1/40 HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:
Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than $\frac{1}{4}$ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	$\frac{1}{2}$ m ($1\frac{1}{2}$ ft)		1 $5\frac{1}{2}$ m (17 $\frac{1}{2}$ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	$1\frac{1}{2}$ m (5 ft)		3 $6\frac{1}{2}$ m (21 ft)
4	2 m ($6\frac{1}{2}$ ft)		4 7 m (22 $\frac{1}{2}$ ft)
5	$2\frac{1}{2}$ m (8 ft)		5 $7\frac{1}{2}$ m (24 ft)
6	3 m ($9\frac{1}{2}$ ft)		6 8 m (25 $\frac{1}{2}$ ft)
7	$3\frac{1}{2}$ m (11 ft)		7 $8\frac{1}{2}$ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	$4\frac{1}{2}$ m (14 ft)		9 $9\frac{1}{2}$ m (30 $\frac{1}{2}$ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
	03	Clouds generally forming or developing	
Haze, dust, sand or smoke	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	} shallow fog or ice fog at the station, whether on land or sea, not
	12	More or less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	} at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
ww = 20 - 29			
	20	Drizzle (not freezing) or snow grains	} not falling as shower(s)
	21	Rain (not freezing)	
	22	Snow	
	23	Rain and snow or ice pellets, type (a)	
	24	Freezing drizzle or freezing rain	
	25	Shower(s) of rain	
	26	Shower(s) of snow, or of rain and snow	
	27	Shower(s) of hail, or of rain and hail	
	28	Fog or ice fog	
	29	Thunderstorm (with or without precipitation)	
ww = 30 - 39			
	30		- has decreased during the preceding hour
	31	} Slight or moderate dust-storm or sand-storm	- no appreciable change during the preceding hour
	32		- has begun or has increased during the preceding hour
	33	} Severe dust-storm or sand-storm	- has decreased during the preceding hour
	34		- no appreciable change during the preceding hour
	35		- has begun or has increased during the preceding hour
	36	Slight or moderate blowing snow	} generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	} generally high (above eye level)
	39	Heavy blowing snow	
ww = 40 - 49			
	40	Fog or ice fog at the time of observation	
	41	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	42	Fog or ice fog in patches	
	43	Fog or ice fog, sky visible	} has become thinner during the preceding hour
	44	Fog or ice fog, sky invisible	
	45	Fog or ice fog, sky visible	} no appreciable change during the preceding hour
	46	Fog or ice fog, sky invisible	
	47	Fog or ice fog, sky visible	} has begun or has become thicker during the preceding hour
	48	Fog or ice fog, sky invisible	
	49	Fog, depositing rime, sky visible	
		Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | | |
|----|--|---|--------------------------------------|
| 50 | Drizzle, not freezing, intermittent | { | slight at time of observation |
| 51 | Drizzle, not freezing, continuous | | |
| 52 | Drizzle, not freezing, intermittent | { | moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | | |
| 54 | Drizzle, not freezing, intermittent | { | heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | | |
| 56 | Drizzle, freezing, slight | | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | | |
| 58 | Drizzle and rain, slight | | |
| 59 | Drizzle and rain, moderate or heavy | | |

ww = 60 - 69 Rain

- | | | | |
|----|---|---|---------------------------------|
| 60 | Rain, not freezing, intermittent | { | slight at time of observation |
| 61 | Rain, not freezing, continuous | | |
| 62 | Rain, not freezing, intermittent | { | moderate at time of observation |
| 63 | Rain, not freezing, continuous | | |
| 64 | Rain, not freezing, intermittent | { | heavy at time of observation |
| 65 | Rain, not freezing, continuous | | |
| 66 | Rain, freezing, slight | | |
| 67 | Rain, freezing, moderate or heavy | | |
| 68 | Rain or drizzle and snow, slight | | |
| 69 | Rain or drizzle and snow, moderate or heavy | | |

70 - 79 Solid precipitation not in showers

ww

- | | | | |
|----|---|---|---------------------------------|
| 70 | Intermittent fall of snow flakes | { | slight at time of observation |
| 71 | Continuous fall of snow flakes | | |
| 72 | Intermittent fall of snow flakes | { | moderate at time of observation |
| 73 | Continuous fall of snow flakes | | |
| 74 | Intermittent fall of snow flakes | { | heavy at time of observation |
| 75 | Continuous fall of snow flakes | | |
| 76 | Ice prisms (with or without fog) | | |
| 77 | Snow grains (with or without fog) | | |
| 78 | Isolated starlike snow crystals (with or without fog) | | |
| 79 | Ice pellets, type (a) | | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | | |
|----|--|---|---|
| 80 | Rain shower(s), slight | | |
| 81 | Rain shower(s), moderate or heavy | | |
| 82 | Rain shower(s), violent | | |
| 83 | Shower(s) of rain and snow mixed, slight | | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | | |
| 85 | Snow shower(s), slight | | |
| 86 | Snow shower(s), moderate or heavy | | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain | { | - slight |
| 88 | or rain and snow mixed | | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | { | - moderate or heavy |
| 90 | Slight rain at time of observation | | |
| 91 | Moderate or heavy rain at time of observation | { | thunderstorm during the preceding hour but not at time of observation |
| 92 | Slight snow, or rain and snow mixed or hail at time of observation | | |
| 93 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | { | thunderstorm at time of observation |
| 94 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | | |
| 95 | Thunderstorm, slight or moderate, with hail at time of observation | { | thunderstorm at time of observation |
| 96 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | | |
| 97 | Thunderstorm, combined with duststorm or sandstorm at time of observation | { | thunderstorm at time of observation |
| 98 | Thunderstorm, heavy, with hail at time of observation | | |
| 99 | Thunderstorm, heavy, with hail at time of observation | | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{4}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11

Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N. B.
04. Arctic Biological Station, Ste. Anne de Bellevue, P. Q.
05. Biological Station, St. John's Nfld.
06. Station de Biologie Marine, Grande Riviere, P. Q.
07. Marine Sciences Branch, Central Region.
08. Naval Research Establishment, Dartmouth, N. S.
09. Pacific Naval Laboratory, Esquimalt, B. C.
10. Bedford Institute of Oceanography, (MSB. Atlantic Region).
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Institute of Oceanography, University of British Columbia.
14. Institute of Oceanography, Dalhousie University.
15. Marine Sciences Branch, Pacific Region.
16. Department of Transport.
17. Marine Sciences Centre, McGill University.
18. RCN East Coast.
19. RCN West Coast.
20. Ontario Water Resources Commission.
21. Department of National Health and Welfare.
22. Inland Waters Branch, Dept. of Energy, Mines and Resources.

SECTION 111

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation Platform:</u>	CSS "Baffin"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number of stations occupied:</u>	34
<u>Anemometer Height above sea level:</u>	22 metres
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Wet bulb temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 002	YR 1965	DEPTH 85	WAVES 1 2522	AIR T 00.8	VIS 8
CONS. NO 001	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -00.6	STN 001
LAT 46-550N	DAY 21	NO.DPTH 7	WND-DIR 260	WW-CODE 02	
LON 60-100W	HR 16.7	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
167	0000	045 B	30691		2434	14632
167	0010	0445	30671		2433	14631
167	0020	0443	30676		2434	14632
167	0030	0441	30683		2434	14633
167	0040	0433	30744		2440	14632
167	0050	0433	30855		2449	14635
167	0075	0417	31070		2467	14635

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0450 B	30691		2434	14632	0000	00000	3595
0010	0445	30671		2433	14631	0036	00002	3606
0020	0443	30676		2434	14632	0072	00007	3601
0030	0441	30683		2434	14633	0109	00017	3594
0050	0433	30855		2449	14635	0179	00046	3458
0075	0417	31070		2467	14635	0264	00100	3282

C-REF-NO 002	YR 1965	DEPTH 307	WAVES 1 2522	AIR T 00.8	VIS 8
CONS. NO 002	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -00.6	STN 002
LAT 47-052N	DAY 21	NO.DPTH 11	WND-DIR 260	WW-CODE 02	
LON 60-000W	HR 18.4	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
184	0000	032 B	31387		2501	14586
184	0010	0308	31402		2503	14582
184	0020	0311	31436		2506	14586
184	0029	0315	31617		2520	14591
184	0039	0313	31681		2525	14593
184	0049	0311	31708		2528	14594
184	0073	0309	31861		2540	14599
184	0098	0177	32569		2607	14555
184	0147	0057	33198		2665	14518
184	0196	0307	33908		2703	14646
184	0245	0438	34418		2731	14717

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0320 B	31387		2501	14586	0000	00000	2955
0010	0308	31402		2503	14582	0030	00002	2934
0020	0311	31436		2506	14586	0059	00006	2911
0030	0315	31627		2521	14592	0088	00013	2770
0050	0312	31708		2527	14595	0143	00036	2707
0075	0300	3191 C		2545	14596	0209	00078	2544
0100	0167	3260 C		2610	14551	0265	00127	1921
0125	0077 D	3297 I		2645	14520	0309	00178	1584
0150	0069 C	33243		2668	14525	0346	00230	1374
0175	0184 I	3361 D		2689	14586	0378	00283	1172
0200	0238 I	3391 I		2709	14617	0406	00335	0991
0225	0336 I	3420 F		2723	14668	0429	00386	0862

C-REF-NO 002	YR 1965	DEPTH 453	WAVES 1 2522	AIR T 00.8	VIS 8
CONS. NO 003	MONTH 11	MXSAMPD 04	WAVES 2 00XX	WET B -00.6	STN 003
LAT 47-150N	DAY 21	NO.DPTH 13	WND-DIR 260	WW-CODE 02	
LON 59-500W	HR 20.0	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
200	0000	030 B	32026		2554	14586
200	0010	0300	31950		2548	14586
200	0020	0299	32031		2554	14589
200	0030	0304	32058		2556	14593
200	0040	0298	32108		2560	14593
200	0050	0273	32198		2570	14585
200	0074	0129	32778		2627	14533
200	0099	0080	32982		2646	14518
200	0149	0081	33266		2669	14530
200	0198	0342	34047		2711	14664
200	0248	0404	34335		2728	14702
200	0298	0428	34561		2743	14723
200	0397	0426	34767		2759	14742

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0300 B	32026		2554	14586	0000	00000	2455
0010	0300	31950		2548	14586	0025	00001	2513
0020	0299	32031		2554	14589	0050	00005	2451
0030	0304	32058		2556	14593	0075	00011	2435
0050	0273	32198		2570	14585	0122	00031	2305
0075	0126	32790		2628	14532	0173	00063	1752
0100	0078	32986		2646	14517	0215	00100	1575
0125	0056 C	3311 I		2657	14513	0254	00144	1470
0150	0086	33282		2670	14533	0289	00194	1355
0175	0216 I	3368 I		2693	14600	0321	00246	1144
0200	0347	34064		2712	14666	0347	00297	0971
0225	0391 D	3424 F		2721	14691	0371	00348	0885
0250	0405	34345		2728	14703	0392	00401	0822
0300	0434 B	34563		2742	14726	0431	00508	0695
0400	0424	34769		2760	14742	0493	00728	0541

C-REF-NO 002	YR 1965	DEPTH 466	WAVES 1 2522	AIR T 00.8	VIS 8
CONS. NO 004	MONTH 11	MXSAMPD 04	WAVES 2 00XX	WET B -00.6	STN 004
LAT 47-250N	DAY 21	NO.DPTH 13	WND-DIR 260	WW-CODE 02	
LON 59-350W	HR 22.0	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1018.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0000	043 B	32255		2560	14644
220	0010	0374	32243		2564	14622
220	0020	0373	32244		2565	14623
220	0030	0376	32254		2565	14626
220	0040	0382	32281		2567	14631
220	0050	0382	32289		2567	14633
220	0074	0158	32722		2620	14545
220	0099	0054	33062		2654	14507
220	0148	0209	33563		2684	14591
220	0197	0432	34237		2717	14704
220	0246	0460	34473		2732	14727
220	0296	0433	34609		2746	14726
220	0395	0423	34771		2760	14740

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0430 B	32255		2560	14644	0000	00000	2397
0010	0374	32243		2564	14622	0024	00001	2355
0020	0373	32244		2565	14623	0048	00005	2353
0030	0376	32254		2565	14626	0071	00011	2349
0050	0382	32289		2567	14633	0118	00030	2329
0075	0151	32737		2622	14542	0170	00063	1809
0100	0054	33072		2655	14507	0212	00100	1496
0125	0102 H	3333 E		2673	14537	0248	00140	1328
0150	0219	3359 B		2685	14597	0280	00185	1212
0175	0340 E	3395 H		2703	14658	0308	00233	1047
0200	0437	34259		2718	14707	0333	00280	0916
0225	0463 C	3441 E		2727	14724	0355	00328	0838
0250	0459	34486		2734	14727	0375	00378	0774
0300	0450 F	3464 D		2747	14734	0411	00479	0658
0400	0420	34772		2760	14740	0472	00692	0534

C-REF-NO 002	YR 1965	DEPTH 292	WAVES 1 2522	AIR T 01.8	VIS 8
CONS. NO 005	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -00.5	STN 005
LAT 47-342N	DAY 21	NO.DPTH 11	WND-DIR 260	WW-CODE 02	
LON 59-215W	HR 23.7	W-COLOR	WND-SPD 08	CLD-TPE 4	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1019.1	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
237	0000	042 B	32241		2560	14640
237	0010	0421	32228		2559	14642
237	0020	0422	32230		2559	14644
237	0030	0425	32244		2560	14647
237	0040	0429	32257		2560	14650
237	0050	0423	32258		2561	14650
237	0075	0393	32351		2571	14642
237	0100	0247	32635		2607	14587
237	0150	0117	33370		2675	14548
237	0200	0437	34206		2714	14706
237	0250	0464	34484		2733	14730

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0420 B	32241		2560	14640	0000	00000	2398
0010	0421	32228		2559	14642	0024	00001	2409
0020	0422	32230		2559	14644	0048	00005	2410
0030	0425	32244		2560	14647	0073	00011	2403
0050	0423	32258		2561	14650	0121	00031	2391
0075	0393	32351		2571	14642	0180	00069	2294
0100	0247	32635		2607	14587	0233	00116	1956
0125	0140 E	3298 B		2642	14549	0278	00167	1616
0150	0117	33370		2675	14548	0315	00219	1307
0175	0267 I	3382 I		2699	14625	0345	00269	1083
0200	0437	34206		2714	14706	0371	00318	0955
0225	0379 I	3432 I		2729	14687	0393	00366	0813
0250	0464	34484		2733	14729	0413	00415	0782

C-REF-NO 002	YR 1965	DEPTH 164	WAVES 1 2522	AIR T 00.0	VIS 8
CONS. NO 006	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -01.6	STN 006
LAT 47-595N	DAY 22	NO.DPTH 9	WND-DIR 250	WW-CODE 02	
LON 59-301W	HR 02.4	W-COLOR	WND-SPD 08	CLD-TPE 4	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1018.4	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
024	0000	040 B	32155		2555	14630
024	0010	0394	32130		2554	14629
024	0020	0408	32237		2561	14638
024	0030	0414	32292		2564	14643
024	0040	0412	32316		2567	14644
024	0050	0410	32316		2567	14645
024	0075	0403	32326		2568	14646
024	0100	0248	32619		2605	14588
024	0150	0110	33121		2655	14542

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0400 B	32155		2555	14630	0000	00000	2444
0010	0394	32130		2554	14629	0025	00001	2458
0020	0408	32237		2561	14638	0049	00005	2391
0030	0414	32292		2564	14643	0073	00011	2356
0050	0410	32316		2567	14645	0120	00030	2335
0075	0403	32326		2568	14646	0179	00068	2323
0100	0248	32619		2605	14588	0233	00116	1969
0125	0215 I	3279 I		2621	14579	0280	00171	1817
0150	0110	33121		2655	14541	0322	00229	1492

C-REF-NO 002	YR 1965	DEPTH 464	WAVES 1 2622	AIR T 00.3	VIS 8
CONS. NO 007	MONTH 11	MXSAMPD 04	WAVES 2 00XX	WET B -01.5	STN 007
LAT 48-089N	DAY 22	NO.DPTH 13	WND-DIR 270	WW-CODE 01	
LON 60-060W	HR 05.6	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
056	0000	029 B	31882		2543	14579
056	0010	0295	31918		2546	14584
056	0020	0296	31932		2547	14586
056	0030	0299	31949		2548	14589
056	0040	0304	31978		2550	14593
056	0050	0101	32482		2605	14512
056	0074	0097	32729		2625	14518
056	0098	0039	32876		2640	14497
056	0147	0051	33155		2661	14515
056	0196	0280	33816		2698	14634
056	0245	0405	34268		2722	14701
056	0295	0442	34541		2740	14729
056	0395	0426	34754		2758	14741

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0290 B	31882		2543	14579	0000	00000	2556
0010	0295	31918		2546	14584	0026	00001	2533
0020	0296	31932		2547	14586	0051	00005	2524
0030	0299	31949		2548	14589	0076	00012	2514
0050	0101	32482		2605	14512	0122	00030	1972
0075	0095	32736		2625	14517	0169	00060	1775
0100	0036	32884		2640	14496	0212	00098	1630
0125	0021	3301 F		2651	14496	0251	00144	1527
0150	0063 B	3319 B		2664	14521	0288	00196	1409
0175	0175 G	3352 H		2683	14580	0322	00251	1232
0200	0294	33860		2700	14641	0351	00307	1075
0225	0366	34107		2713	14679	0376	00362	0958
0250	0411	34302		2724	14705	0399	00418	0861
0300	0461 E	3458 D		2741	14738	0439	00529	0709
0400	0419	34749		2759	14739	0502	00753	0550

C-REF-NO 002	YR 1965	DEPTH 420	WAVES 1 2622	AIR T 00.3	VIS 8
CONS. NO 008	MONTH 11	MXSAMPD 04	WAVES 2 00XX	WET B -01.5	STN 008
LAT 48-225N	DAY 22	NO.DPTH 13	WND-DIR 220	WW-CODE 02	
LON 60-388W	HR 08.3	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
083	0000	034 B	31995		2548	14603
083	0010	0324	31976		2548	14597
083	0020	0326	31980		2548	14600
083	0030	0326	31976		2548	14601
083	0040	0325	31977		2548	14602
083	0049	0326	31979		2548	14604
083	0074	0040	32514		2610	14489
083	0098	0026	32983		2649	14493
083	0147	0286	33822		2698	14628
083	0196	0398	34221		2719	14689
083	0244	0436	34487		2736	14717
083	0292	0437	34615		2746	14727
083	0390	0423	34794		2762	14740

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340 B	31995		2548	14603	0000	00000	2512
0010	0324	31976		2548	14597	0025	00001	2513
0020	0326	31980		2548	14600	0051	00005	2512
0030	0326	31976		2548	14601	0076	00012	2515
0050	0316 B	3199 B		2550	14600	0126	00032	2495
0075	0036	32534		2612	14487	0182	00067	1897
0100	0034 B	33023		2652	14498	0225	00105	1523
0125	0154 I	3348 D		2681	14562	0259	00145	1247
0150	0296	33855		2700	14633	0289	00186	1078
0175	0364 B	3409 D		2712	14670	0315	00229	0969
0200	0403	34248		2721	14693	0338	00274	0888
0225	0427	34397		2730	14709	0359	00320	0804
0250	0437	34507		2738	14719	0379	00367	0735
0300	0446 C	3467 F		2749	14733	0413	00464	0631

C-REF-NO 002	YR 1965	DEPTH 393	WAVES 1 2321	AIR T 01.8	VIS 7
CONS. NO 009	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B 01.2	STN 009
LAT 48-360N	DAY 22	NO.DPTH 12	WND-DIR 220	WW-CODE 85	
LON 61-110W	HR 10.9	W-COLOR	WND-SPD 02	CLD-TPE 7	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.9	CLD-AMT 8	HW

OBSERVED

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
109	0000	033 B	31968		2547	14598
109	0010	0316	31957		2547	14593
109	0020	0316	31955		2547	14595
109	0030	0317	31957		2547	14597
109	0040	0318	31957		2547	14599
109	0050	0317	31957		2547	14600
109	0075	0024	32616		2619	14483
109	0100	0022	32793		2634	14489
109	0150	0104	33293		2669	14541
109	0200	0315	33911		2703	14651
109	0250	0427	34351		2726	14712
109	0300	0437	34528		2739	14727

INTERPOLATED

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0330 B	31968		2547	14598	0000	00000	2524
0010	0316	31957		2547	14593	0025	00001	2521
0020	0316	31955		2547	14595	0051	00005	2523
0030	0317	31957		2547	14597	0076	00012	2522
0050	0317	31957		2547	14600	0127	00033	2523
0075	0024	32616		2619	14483	0182	00067	1829
0100	0022	32793		2634	14489	0226	00106	1692
0125	0048	33023		2651	14508	0267	00153	1529
0150	0104	33293		2669	14541	0303	00204	1357
0175	0208 E	3361 D		2687	14596	0335	00257	1194
0200	0315	33911		2703	14651	0363	00311	1056
0225	0384	34159		2716	14687	0389	00366	0938
0250	0427	34351		2726	14712	0411	00421	0841
0300	0437	34528		2739	14727	0450	00531	0724

C-REF-NO 002	YR 1965	DEPTH 160	WAVES 1 1921	AIR T -00.1	VIS 6
CONS. NO 010	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -00.6	STN 010
LAT 48-550N	DAY 22	NO.DPTH 9	WND-DIR 090	WW-CODE 71	
LDN 61-400W	HR 13.5	W-COLOR	WND-SPD 04	CLD-TPE 7	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
135	0000	022 B	31608		2527	14545
135	0010	0211	31613		2528	14543
135	0020	0181	31793		2544	14534
135	0030	0178	31818		2546	14534
135	0040	0145	31912		2556	14522
135	0050	0096	32130		2577	14505
135	0075	-0077	32766		2636	14439
135	0100	-0076	32945		2650	14446
135	0150	0154	33508		2683	14567

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0220 B	31608		2527	14545	0000	00000	2712
0010	0211	31613		2528	14543	0027	00001	2702
0020	0181	31793		2544	14534	0054	00005	2545
0030	0178	31818		2546	14534	0079	00012	2524
0050	0096	32130		2577	14505	0127	00031	2237
0075	-0077	32766		2636	14439	0176	00062	1671
0100	-0076	32945		2650	14446	0217	00098	1534
0125	-0030 F	3336 I		2682	14477	0252	00138	1237
0150	0154	33508		2683	14566	0283	00182	1228

C-REF-NO 002	YR 1965	DEPTH 259	WAVES 1 1521	AIR T 01.0	VIS 6
CONS. NO 011	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B 00.7	STN 011
LAT 49-080N	DAY 22	NO.DPTH 11	WND-DIR 150	WW-CODE 26	
LON 59-590W	HR 20.2	W-COLOR	WND-SPD 05	CLD-TPE 7	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1020.1	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
202	0000	023 B	31758		2538	14552
202	0010	0212	31748		2539	14545
202	0020	0209	31748		2539	14545
202	0030	0209	31748		2539	14547
202	0040	0210	31753		2539	14549
202	0050	0014	32531		2613	14473
202	0075	-0041	32727		2631	14455
202	0100	0006	32985		2650	14484
202	0150	0221	33632		2688	14598
202	0200	0402	34238		2720	14692
202	0250	0426	34444		2734	14713

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0230 B	31758		2538	14552	0000	00000	2605
0010	0212	31748		2539	14545	0026	00001	2600
0020	0209	31748		2539	14545	0052	00005	2598
0030	0209	31748		2539	14547	0078	00012	2598
0050	0014	32531		2613	14473	0124	00030	1889
0075	-0041	32727		2631	14455	0169	00059	1715
0100	0006	32985		2650	14484	0210	00095	1538
0125	0106 D	3330 C		2670	14538	0246	00137	1353
0150	0221	33632		2688	14598	0278	00182	1184
0175	0323 C	3396 E		2706	14651	0306	00228	1023
0200	0402	34238		2720	14692	0330	00274	0895
0225	0416 D	3434 H		2727	14703	0352	00322	0836
0250	0426	34444		2734	14713	0372	00371	0770

C-REF-NO 002	YR 1965	DEPTH 58	WAVES 1 1221	AIR T. 02.2	VIS 8
CONS. NO 012	MONTH 11	MXSAMPD 00	WAVES 2 00XX	WET B 01.2	STN 012
LAT 49-200N	DAY 23	NO.DPTH 6	WND-DIR 060	WW-CODE 02	
LON 58-300W	HR 01.2	W-COLOR	WND-SPD 04	CLD-TPE 6	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1020.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
012	0000	035 B	31856		2536	14605
012	0010	0323	31841		2537	14595
012	0020	0323	31840		2537	14596
012	0030	0323	31837		2537	14598
012	0040	0323	31841		2537	14600
012	0050	0320	31862		2539	14600

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	31856		2536	14605	0000	00000	2625
0010	0323	31841		2537	14595	0026	00001	2614
0020	0323	31840		2537	14596	0053	00005	2615
0030	0323	31837		2537	14598	0079	00012	2618
0050	0320	31862		2539	14600	0131	00034	2597

C-REF-NO 002	YR 1965	DEPTH 142	WAVES 1 1221	AIR T 02.4	VIS 8
CONS. NO 013	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B 01.2	STN 013
LAT 49-350N	DAY 23	NO.DPTH 8	WND-DIR 050	WW-CODE 02	
LON 58-500W	HR 03.2	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1018.6	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
032	0000	032 B				
032	0010	0313	31812		2536	14590
032	0020	0313	31811		2536	14592
032	0030	0313	31812		2536	14593
032	0039	0314	31811		2535	14595
032	0049	0135	32551		2608	14528
032	0074	0036	32765		2631	14491
032	0098	0037	32906		2642	14497

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0320 B	3181 C		2535	14591	0000	00000	2633
0010	0313	31812		2536	14590	0026	00001	2628
0020	0313	31811		2536	14592	0053	00005	2629
0030	0313	31812		2536	14593	0079	00012	2629
0050	0125 B	3258 E		2611	14524	0125	00030	1910
0075	-0023 I	3310 I		2660	14468	0167	00056	1440
0100	0052 C	3285 I		2637	14503	0206	00092	1663

C-REF-NO 002	YR 1965	DEPTH 256	WAVES 1 0523	AIR T 01.0	VIS 8
CONS. NO 014	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B 00.0	STN 014
LAT 49-498N	DAY 23	NO.DPTH 11	WND-DIR 060	WW-CODE 02	
LON 59-250W	FR 05.8	W-COLOR	WND-SPD 15	CLD-TPE 6	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1015.6	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
058	0000	027 B	31774		2536	14569
058	0010	0264	31757		2535	14568
058	0020	0262	31760		2536	14569
058	0030	0261	31759		2536	14570
058	0040	0260	31759		2536	14571
058	0050	0138 B	32139		2575	14524
058	0075	-0058	32805		2638	14448
058	0100	-0042	33021		2655	14463
058	0150	0180	33510		2682	14578
058	0200	0321	33959		2706	14654
058	0250	0419	34356		2728	14709

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0270 B	31774		2536	14569	0000	00000	2622
0010	0264	31757		2535	14568	0026	00001	2631
0020	0262	31760		2536	14569	0053	00005	2627
0030	0261	31759		2536	14570	0079	00012	2628
0050	0138 B	32139		2575	14524	0128	00032	2255
0075	-0058	32805		2638	14448	0178	00062	1649
0100	-0042	33021		2655	14463	0217	00098	1489
0125	0058 G	3326 B		2670	14516	0253	00139	1353
0150	0180	33510		2682	14578	0286	00185	1245
0175	0258	33740		2694	14620	0316	00235	1133
0200	0321	33959		2706	14654	0343	00287	1025
0225	0381	34162		2716	14686	0367	00341	0932
0250	0419	34356		2728	14709	0390	00395	0829

C-REF-NO 002 YR 1965 DEPTH 128 WAVES 1 0322 AIR T -00.7 VIS 8
 CONS. NO 015 MONTH 11 MXSAMPD 01 WAVES 2 00XX WET B -02.0 STN 015
 LAT 50-050N DAY 23 NO.DPTH 8 WND-DIR 030 WW-CODE 02
 LON 59-555W HR 08.1 W-COLOR WND-SPD 15 CLD-TPE 6
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1019.0 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
081	0000	022 B	31459		2515	14543
081	0010	0222	31464		2515	14546
081	0020	0227	31485		2516	14550
081	0030	0239	31520		2518	14557
081	0040	0250	31545		2519	14564
081	0050	0251 B	31554		2520	14566
081	0075	0158	32221		2580	14538
081	0100	0034	32616		2619	14492

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0220 B	31459		2515	14543	0000	00000	2825
0010	0222	31464		2515	14546	0028	00001	2823
0020	0227	31485		2516	14550	0057	00006	2810
0030	0239	31520		2518	14557	0085	00013	2793
0050	0251 B	31554		2520	14566	0141	00036	2776
0075	0158	32221		2580	14538	0204	00075	2205
0100	0034	32616		2619	14492	0254	00120	1833

C-REF-NO 002	YR 1965	DEPTH 261	WAVES 1 0735	AIR T -00.8	VIS 7
CONS. NO 016	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -00.6	STN 016
LAT 49-450N	DAY 23	NO.DPTH 11	WND-DIR 070	WW-CODE 70	
LON 61-500W	HR 14.8	W-COLOR	WND-SPD 18	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.2	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
148	0000	022 B	31559		2523	14544
148	0010	0220	31557		2523	14546
148	0020	0219	31564		2523	14547
148	0030	0219	31562		2523	14549
148	0039	0212	31613		2528	14548
148	0049	0218	31690		2533	14553
148	0074	-0033	32692		2628	14458
148	0098	-0055	32872		2644	14454
148	0148	0069	33256		2669	14525
148	0197	0235	33706		2693	14613
148	0246	0417	34368		2729	14708

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0220 B	31559		2523	14544	0000	00000	2749
0010	0220	31557		2523	14546	0028	00001	2751
0020	0219	31564		2523	14547	0055	00006	2745
0030	0219	31562		2523	14549	0083	00013	2747
0050	0209 B	3173 D		2537	14550	0137	00035	2615
0075	-0037	3271 B		2630	14457	0192	00068	1732
0100	-0053	32887		2645	14456	0233	00106	1587
0125	-0005 D	33074		2658	14484	0272	00150	1464
0150	0075	33272		2669	14528	0307	00200	1356
0175	0157	3349 B		2681	14572	0340	00254	1246
0200	0241 B	3376 E		2697	14617	0370	00311	1102
0225	0333	3408 C		2714	14665	0396	00367	0950
*0250	0434	34426		2732	14716	0418	00421	0792

C-REF-NO 002	YR 1965	DEPTH 128	WAVES 1 0735	AIR T -01.0	VIS 7
CONS. NO 017	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -01.7	STN 017
LAT 50-029N	DAY 23	NO.DPTH 8	WND-DIR CALM	WW-CODE 70	
LON 64-040W	HR 21.9	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 187	C/I 1810	W-TRNSP	BARO 1004.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
219	0000	025 B	31519		2517	14557
219	0010	0250	31516		2517	14559
219	0020	0250	31515		2517	14560
219	0030	0246	31532		2519	14560
219	0040	0151	31844		2550	14524
219	0050	0105	31991		2565	14507
219	0075	0084	32426		2601	14508
219	0100	0082	32548		2611	14513

#TIME-DISTANCE CHECK FAILED

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0250 B	31519		2517	14557	0000	00000	2801
0010	0250	31516		2517	14559	0028	00001	2803
0020	0250	31515		2517	14560	0056	00006	2804
0030	0246	31532		2519	14560	0085	00013	2789
0050	0105	31991		2565	14507	0136	00034	2348
0075	0084	32426		2601	14508	0191	00068	2005
0100	0082	32548		2611	14513	0240	00112	1910

C-REF-NO 002	YR 1965	DEPTH 128	WAVES 1 0121	AIR T -03.5	VIS 8
CONS. NO 018	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -03.0	STN 018
LAT 50-016N	DAY 24	NO.DPTH 8	WND-DIR 010	WW-CODE 01	
LON 66-196W	HR 05.0	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 187	C/I 1810	W-TRNSP	BARO 1006.9	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
050	0000	016 B	31404		2515	14516
050	0010	0157	31373		2512	14516
050	0020	0171	31446		2517	14524
050	0030	0176	31476		2519	14529
050	0040	0193	31566		2525	14539
050	0050	0197	31790		2543	14546
050	0075	0157	32075		2568	14536
050	0100	0135	32530		2606	14536

*TIME-DISTANCE CHECK FAILED

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0160 B	31404		2515	14516	0000	00000	2828
0010	0157	31373		2512	14516	0029	00001	2850
0020	0171	31446		2517	14524	0057	00006	2803
0030	0176	31476		2519	14529	0085	00013	2783
0050	0197	31790		2543	14546	0139	00035	2558
0075	0157	32075		2568	14536	0200	00074	2316
0100	0135	32530		2606	14536	0254	00121	1956

C-REF-NO 002	YR 1965	DEPTH 296	WAVES 1 3222	AIR T -03.0	VIS 8
CONS. NO 019	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -04.5	STN 019
LAT 49-478N	DAY 24	NO.DPTH 11	WND-DIR 330	WW-CODE 02	
LON 66-200W	HR 06.6	W-COLOR	WND-SPD 14	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1007.3	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	015 B	31557		2527	14513
066	0010	0153 B	31572		2528	14516
066	0020	0154	31667		2536	14520
066	0030	0126	32212		2581	14516
066	0040	0089	32533		2609	14506
066	0050	0066	32681		2623	14499
066	0074	0037	32850		2638	14492
066	0099	0095	33275		2669	14528
066	0149	0218	33651		2690	14597
066	0198	0291	33879		2702	14640
066	0247	0409	34337		2727	14704

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0150 B	31557		2527	14513	0000	00000	2706
0010	0153 B	31572		2528	14516	0027	00001	2696
0020	0154	31667		2536	14520	0054	00005	2624
0030	0126	32212		2581	14516	0078	00012	2192
0050	0066	32681		2623	14499	0118	00028	1801
0075	0038	32866		2639	14493	0162	00055	1645
0100	0098	33286		2669	14530	0200	00089	1358
0125	0161 B	3352 G		2684	14566	0232	00126	1224
0150	0220	33655		2690	14597	0262	00168	1165
0175	0257 B	3377 E		2696	14619	0291	00216	1112
0200	0311 E	3396 I		2707	14649	0318	00268	1018
0225	0363 C	3415 H		2717	14679	0342	00321	0921
*0250	0415	3436 B		2729	14708	0364	00374	0820

C-REF-NO 002	YR 1965	DEPTH 323	WAVES 1 3322	AIR T -02.7	VIS 8
CONS. NO 020	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -04.0	STN 020
LAT 49-350N	DAY 24	NO.DPTH 12	WND-DIR 340	WW-CODE 02	
LON 66-19CW	HR 08.2	W-COLOR	WND-SPD 11	CLD-TPL 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1007.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
082	0000	007 B	32110		2576	14485
082	0010	0064	32084		2575	14483
082	0020	0062	32087		2575	14484
082	0029	0062	32084		2575	14486
082	0039	0065	32102		2576	14489
082	0049	0044	32828		2636	14491
082	0073	0125	33303		2669	14538
082	0097	0204	33573		2685	14581
082	0145	0327	34015		2710	14648
082	0193	0407	34349		2728	14695
082	0240	0440	34514		2738	14718
082	0289	0454	34610		2744	14733

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0070 B	32110		2576	14485	0000	00000	2240
0010	0064	32084		2575	14483	0023	00001	2256
0020	0062	32087		2575	14484	0045	00005	2252
0030	0063	3207 D		2574	14486	0068	00010	2266
0050	0046	3287 D		2639	14492	0107	00026	1648
0075	0132	33330		2671	14542	0145	00050	1347
0100	0213	33604		2687	14586	0177	00078	1197
0125	0281	33845		2700	14623	0206	00111	1071
0150	0337	34056		2712	14654	0231	00147	0964
0175	0382	34240		2722	14680	0255	00186	0871
0200	0414	34381		2730	14699	0276	00226	0800
0225	0433	34474		2735	14712	0295	00269	0753
0250	0449	3456 C		2740	14724	0314	00314	0712

C-REF-NO 002	YR 1965	DEPTH 310	WAVES 1 3322	AIR T -01.3	VIS 8
CONS. NO 021	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -03.0	STN 021
LAT 49-249N	DAY 24	NO.DPTH 12	WND-DIR 340	WW-CODE 02	
LON 66-200W	HR 09.5	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.2	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
095	0000	009 B	29892		2398	14463
095	0010	0076	29775		2389	14457
095	0019	0155	31218		2500	14514
095	0029	0154	32100		2571	14527
095	0039	0117	32428		2599	14517
095	0048	0089	32535		2609	14507
095	0072	0044	32865		2638	14495
095	0097	0044	33100		2657	14503
095	0145	0270	33808		2698	14621
095	0194	0363	34145		2717	14673
095	0243	0427	34350		2726	14711
095	0293	0455	34607		2744	14735

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0090 B	29892		2398	14463	0000	00000	3943
0010	0076	29775		2389	14457	0040	00002	4025
0020	0158	31336		2509	14517	0075	00007	2878
0030	0151	3215 B		2575	14527	0101	00014	2255
0050	0084	32563		2612	14505	0142	00030	1900
0075	0041	3289 B		2641	14495	0187	00058	1625
0100	0056 B	3315 C		2660	14509	0225	00093	1442
0125	0166 I	3352 I		2683	14568	0259	00131	1230
0150	0283	3385 B		2701	14628	0288	00172	1067
0175	0337 B	3405 C		2711	14658	0314	00215	0974
0200	0373	34172		2718	14679	0338	00260	0914
0225	0407	3428 B		2723	14699	0360	00309	0871
0250	0432	3442 F		2731	14715	0381	00361	0799

C-REF-NO 002	YR 1965	DEPTH 230	WAVES 1 3322	AIR T -00.7	VIS 8
CONS. NO 022	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -02.4	STN 022
LAT 49-150N	DAY 24	NO.DPTH 10	WND-DIR 320	WW-CODE 02	
LON 66-200W	HR 10.8	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1011.8	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	008 B	29782		2389	14457
108	0010	0063	29738		2386	14451
108	0020	0152	30624		2453	14505
108	0030	0175	31463		2518	14528
108	0040	0165	31590		2529	14527
108	0050	0154	31953		2559	14529
108	0075	0058	32604		2617	14499
108	0100	0024	32887		2641	14491
108	0149	0142	33394		2675	14559
108	0199	0308	33937		2705	14648

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	29782		2389	14457	0000	00000	4022
0010	0063	29738		2386	14451	0041	00002	4048
0020	0152	30624		2453	14505	0078	00008	3417
0030	0175	31463		2518	14528	0109	00016	2792
0050	0154	31953		2559	14529	0162	00037	2406
0075	0058	32604		2617	14498	0215	00070	1855
0100	0024	32887		2641	14491	0259	00109	1621
0125	0066 D	3315 B		2660	14518	0298	00153	1445
0150	0114 I	3342 C		2679	14547	0332	00201	1269
0175	0198 G	3368 B		2694	14592	0362	00251	1127
*0200	0313	33947		2706	14650	0389	00303	1027

C-REF-NO 002	YR 1965	DEPTH 334	WAVES 1 3322	AIR T -02.7	VIS 8
CONS. NO 023	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -03.0	STN 023
LAT 49-260N	DAY 24	NO.DPTH 12	WND-DIR 310	WW-CODE 03	
LON 65-370W	HR 13.5	W-COLOR	WND-SPD 11	CLD-TPE 1	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1017.4	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
135	0000	007 B	31313		2512	14474
135	0010	0066	31487		2527	14476
135	0020	0058	32013		2569	14481
135	0030	0051	32093		2576	14481
135	0040	0041	32296		2593	14481
135	0049	0015	32692		2626	14476
135	0073	0021	32970		2648	14486
135	0097	0070	33188		2663	14516
135	0146	0242	33701		2692	14607
135	0194	0341	34062		2712	14663
135	0243	0386	34253		2723	14693
135	0293	0452	34625		2745	14734

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0070 B	31313		2512	14474	0000	00000	2848
0010	0066	31487		2527	14476	0028	00001	2713
0020	0058	32013		2569	14481	0053	00005	2307
0030	0051	32093		2576	14481	0076	00011	2242
0050	0014	3272 C		2628	14476	0116	00027	1749
0075	0024	32989		2649	14488	0158	00053	1544
0100	0080	33220		2665	14521	0195	00086	1398
0125	0167 D	3348 C		2681	14568	0228	00125	1254
0150	0253	33737		2694	14613	0258	00167	1130
0175	0309	33938		2705	14644	0285	00212	1029
0200	0348	3409 B		2713	14667	0310	00260	0955
0225	0372 B	3418 E		2719	14683	0334	00311	0907
0250	0407 D	3436 I		2729	14704	0356	00364	0817

C-REF-NO 002	YR 1965	DEPTH 69	WAVES 1 3023	AIR T 00.0	VIS 8
CONS. NO 024	MONTH 11	MXSAMPD 00	WAVES 2 00XX	WET B -01.0	STN 024
LAT 49-120N	DAY 24	NO.DPTH 6	WND-DIR 310	WW-CODE 02	
LON 64-502W	HR 16.5	W-COLOR	WND-SPD 13	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1012.4	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
165	0000	009 B	30035		2409	14465
165	0010	0075	30033		2410	14460
165	0020	0073	30065		2412	14461
165	0030	0074	31558		2532	14484
165	0040	0175	31754		2542	14534
165	0050	0133 B				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0090 B	30035		2409	14465	0000	00000	3834
0010	0075	30033		2410	14460	0038	00002	3828
0020	0073	30065		2412	14461	0077	00008	3802
0030	0074	31558		2532	14484	0109	00016	2662
0050	0133 B							

C-REF-NO 002	YR 1965	DEPTH 365	WAVES 1 3023	AIR T 00.0	VIS 8
CONS. NO 025	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -01.0	STN 025
LAT 49-180N	DAY 24	NO.DPTH 12	WND-DIR 310	WW-CODE 02	
LON 64-442W	HR 18.0	W-COLOR	WND-SPD 13	CLO-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1012.5	CLO-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
180	0000	014 B	29692		2379	14483
180	0010	0074	30879		2477	14471
180	0019	0096	31165		2499	14487
180	0029	0119	31866		2554	14508
180	0039	0116	31885		2556	14509
180	0048	0098	31926		2560	14503
180	0073	0015	32727		2629	14480
180	0097	0030	33043		2654	14495
180	0146	0196	33547		2683	14585
180	0195	0303	33919		2704	14645
180	0244	0394	34273		2724	14696
180	0294	0447	34558		2741	14731

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0140 B	29692		2379	14483	0000	00000	4121
0010	0074	30879		2477	14471	0037	00002	3181
0020	0099	3124 F		2505	14489	0067	00006	2917
0030	0120	3188 D		2555	14509	0094	00013	2439
0050	0090	3198 F		2565	14500	0142	00033	2348
0075	0014	3276 B		2632	14480	0194	00064	1712
0100	0038 B	33078		2656	14500	0234	00100	1483
0125	0117 E	33351		2673	14544	0269	00141	1322
0150	0206	33580		2685	14591	0301	00186	1211
0175	0264	3378 B		2696	14623	0330	00234	1111
0200	0314	33957		2706	14651	0357	00286	1020
0225	0362	34141		2716	14678	0382	00339	0929
0250	0398	3430 B		2725	14700	0404	00394	0848

C-REF-NO 002	YR 1965	DEPTH 374	WAVES 1 2923	AIR T -03.0	VIS 8
CONS. NO 026	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -04.5	STN 026
LAT 49-242N	DAY 24	NO.DPTH 12	WND-DIR 290	WW-CODE 01	
LON 64-400W	HR 19.2	W-COLOR	WND-SPD 11	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1014.9	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0000	009 B	31732		2545	14489
192	0010	0088	31755		2547	14490
192	0020	0088	31755		2547	14491
192	0029	0089	31756		2547	14493
192	0039	0099	31801		2550	14500
192	0049	0105	32087		2573	14508
192	0073	0011	32791		2634	14479
192	0097	0082	33181		2662	14521
192	0146	0237	33696		2692	14605
192	0195	0362	34139		2716	14673
192	0245	0432	34440		2733	14715
192	0295	0448	34616		2745	14732

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0090 B	31732		2545	14489	0000	00000	2538
0010	0088	31755		2547	14490	0025	00001	2519
0020	0088	31755		2547	14491	0051	00005	2519
0030	0090	31754		2547	14494	0076	00012	2521
0050	0101	32119		2575	14507	0124	00031	2248
0075	0014	32831		2637	14481	0173	00062	1659
0100	0092	33219		2664	14526	0212	00096	1406
0125	0172	3350 D		2682	14570	0245	00134	1243
0150	0249	33736		2694	14611	0275	00176	1127
0175	0316	33971		2707	14648	0302	00221	1010
0200	0372	34175		2718	14678	0326	00267	0911
0225	0411	34336		2727	14701	0348	00315	0833
0250	0437	34468		2735	14718	0368	00364	0764
0300	0446	34626		2746	14732	0404	00465	0662

C-REF-NO 002	YR 1965	DEPTH 292	WAVES 1 2723	AIR T 00.0	VIS 8
CONS. NO 027	MONTH 11	MXSAMPD 02	WAVES 2 00XX	WET B -00.5	STN 027
LAT 49-321N	DAY 24	NO.DPTH 11	WND-DIR 290	WW-CODE 02	
LON 64-300W	HR 20.6	W-COLOR	WND-SPD 11	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1014.9	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
206	0000	013 B	31885		2555	14509
206	0010	0122	31872		2554	14507
206	0020	0121	31876		2555	14508
206	0029	0121	31765		2546	14508
206	0039	0123	31898		2556	14512
206	0049	0117	31950		2561	14512
206	0073	-0003	32646		2623	14471
206	0098	-0020	32925		2646	14471
206	0147	0150	33436		2678	14563
206	0196	0328	33889		2700	14655
206	0245	0409	34310		2725	14703

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0130 B	31885		2555	14509	0000	00000	2444
0010	0122	31872		2554	14507	0025	00001	2449
0020	0121	31876		2555	14508	0049	00005	2445
0030	0121	3177 B		2547	14508	0074	00011	2523
0050	0112	3198 C		2563	14510	0123	00031	2364
0075	-0008	3268 B		2626	14469	0175	00064	1767
0100	-0016	32947		2648	14474	0217	00101	1557
0125	0057 E	33213		2666	14514	0254	00144	1390
0150	0162	33465		2679	14570	0288	00191	1266
0175	0257 B	33700		2691	14619	0318	00242	1162
0200	0320 F	33929		2703	14653	0346	00295	1047
0225	0374 C	34145		2715	14683	0371	00349	0938

C-REF-NO 002	YR 1965	DEPTH 173	WAVES 1 2724	AIR T 00.3	VIS 8
CONS. NO 028	MONTH 11	MXSAMPD 01	WAVES 2 00XX	WET B -00.8	STN 028
LAT 49-400N	DAY 24	NO.DPTH 9	WND-DIR 290	WW-CODE 02	
LON 64-251W	HR 21.9	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.4	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
219	0000	008 B	31855		2555	14486
219	0010	0067	31846		2555	14481
219	0020	0067	31782		2550	14482
219	0030	0067	31853		2556	14485
219	0040	0084	31982		2565	14496
219	0049	0072	32125		2578	14494
219	0074	-0014	32739		2631	14467
219	0099	-0045	32922		2647	14460
219	0149	0166	33490		2681	14571

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	31855		2555	14486	0000	00000	2439
0010	0067	31846		2555	14481	0025	00001	2439
0020	0067	31782		2550	14482	0049	00005	2488
0030	0067	31853		2556	14485	0074	00011	2433
0050	0069	3215 B		2580	14493	0121	00030	2207
0075	-0017	32750		2632	14466	0170	00061	1708
0100	-0035 C	3306 I		2658	14466	0210	00097	1462
0125	0030 B	3334 I		2677	14504	0245	00136	1282
*0150	0173	3349 B		2681	14575	0276	00181	1252

C-REF-NO 002	YR 1965	DEPTH	378	WAVES 1 2623	AIR T -00.2	VIS
CONS. NO 029	MONTH 11	MXSAMPD	03	WAVES 2 00XX	WET B -00.6	STN 029
LAT 49-102N	DAY 25	NO.DPTH	12	WND-DIR 310	WW-CODE	
LON 63-529W	HR 01.3	W-COLOR		WND-SPD 13	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1015.9	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
013	0000	014 B	30573		2449	14495
013	0010	0135	30568		2449	14495
013	0020	0136	30634		2454	14498
013	0029	0151	30950		2479	14510
013	0039	0135	31365		2513	14510
013	0048	0108	31734		2544	14505
013	0073	0101	31944		2561	14509
013	0097	0040	32611		2618	14494
013	0145	0125	33364		2674	14551
013	0193	0325	33964		2706	14654
013	0243	0416	34338		2727	14706
013	0292	0442	34543		2740	14728

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0140 B	30573		2449	14495	0000	00000	3449
0010	0135	30568		2449	14495	0035	00002	3450
0020	0136	30634		2454	14498	0069	00007	3400
0030	0151	30990		2482	14511	0102	00015	3137
0050	0107	3176 G		2547	14505	0159	00038	2522
0075	0096	3200 C		2566	14507	0220	00077	2340
0100	0040	3267 B		2623	14495	0272	00123	1793
0125	0066 C	3311 H		2657	14517	0313	00170	1476
0150	0146 B	33436		2678	14562	0348	00218	1277
0175	0250 D	33762		2696	14616	0378	00268	1110
0200	0343	34029		2709	14664	0405	00319	0994
0225	0394	34228		2720	14693	0428	00371	0896
0250	0433 C	3439 C		2729	14715	0450	00423	0816

C-REF-NO 002 YR 1965 DEPTH 387 WAVES 1 3421 AIR T 00.0 VIS 8
 CONS. NO 030 MONTH 11 MXSAMPD 03 WAVES 2 00XX WET B -01.7 STN 030
 LAT 48-570N DAY 25 NO.DPTH 12 WND-DIR 350 WW-CODE 02
 LON 63-050W HR 04.4 W-COLOR WND-SPD 04 CLD-TPE 6
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1015.9 CLD-AMT 1 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
044	0000	022 B	31480		2517	14543
044	0010	0195	31470		2518	14534
044	0020	0193	31471		2518	14535
044	0030	0195	31469		2517	14537
044	0040	0211	31499		2519	14546
044	0050	0229	31533		2520	14556
044	0074	0121	32299		2589	14523
044	0099	0008	32760		2632	14482
044	0148	0048	33201		2665	14514
044	0198	0283	33833		2699	14635
044	0247	0418	34312		2724	14708
044	0297	0438	34493		2736	14727

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0220 B	31480		2517	14543	0000	00000	2809
0010	0195	31470		2518	14534	0028	00001	2800
0020	0193	31471		2518	14535	0056	00006	2798
0030	0195	31469		2517	14537	0085	00013	2801
0050	0229	31533		2520	14556	0141	00036	2776
0075	0116	32322		2591	14521	0202	00074	2102
0100	0006	32771		2633	14481	0250	00117	1701
0125	-0004 C	3302 I		2653	14484	0290	00163	1505
0150	0056	33226		2667	14519	0327	00214	1380
0175	0169 F	3354 E		2685	14578	0359	00268	1215
0200	0291	33857		2700	14639	0388	00323	1075
0225	0370	3412 B		2714	14681	0414	00379	0950
0250	0419	3430 F		2723	14708	0437	00435	0868
0300	0436	34498		2737	14726	0477	00549	0746

C-REF-NO 002	YR 1965	DEPTH 384	WAVES 1 3022	AIR T 00.0	VIS 8
CONS. NO 031	MONTH 11	MXSAMPD 03	WAVES 2 00XX	WET B -01.4	STN 031
LAT 48-430N	DAY 25	NO.DPTH 12	WND-DIR 290	WW-CODE 02	
LON 62-190W	HR 07.7	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1016.5	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
077	0000	024 B	31618		2526	14554
077	0010	0231	31609		2526	14552
077	0020	0230	31612		2526	14553
077	0030	0230	31612		2526	14554
077	0040	0231	31615		2527	14557
077	0050	0232	31623		2527	14559
077	0074	0176	31861		2550	14541
077	0099	-0019	32653		2624	14468
077	0149	0010	33045		2655	14495
077	0198	0249	33737		2694	14619
077	0248	0409	34259		2721	14703
077	0298	0435	34498		2737	14726

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0240 B	31618		2526	14554	0000	00000	2719
0010	0231	31609		2526	14552	0027	00001	2719
0020	0230	31612		2526	14553	0055	00006	2716
0030	0230	31612		2526	14554	0082	00013	2716
0050	0232	31623		2527	14559	0137	00035	2710
0075	0168	3189 B		2553	14538	0202	00076	2462
0100	-0022	3267 B		2626	14467	0255	00123	1767
0125	-0052 G	3294 I		2649	14461	0297	00171	1548
0150	0014	33058		2656	14497	0335	00225	1485
0175	0129 F	3340 G		2677	14558	0370	00283	1289
0200	0257	33762		2696	14624	0400	00341	1117
0225	0349	3405 B		2710	14671	0427	00398	0987
0250	0404 C	3426 D		2721	14701	0450	00456	0887
0300	0434	34503		2738	14726	0491	00571	0740

C-REF-NO 002	YR 1965	DEPTH	49	WAVES 1 2922	AIR T -00.2	VIS 8
CONS. NO 032	MONTH 11	MXSAMPD	00	WAVES 2 00XX	WET B -00.5	STN 032
LAT 48-202N	DAY 25	NO.DPTH	5	WND-DIR 290	WW-CODE 03	
LON 63-103W	HR 11.4	W-COLOR		WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1019.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
114	0000	014 B	30932		2478	14500
114	0010	0124	30928		2479	14495
114	0020	0125	30935		2479	14497
114	0030	0154	31175		2497	14515
114	0040	0155	31173		2496	14517

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0140 B	30932		2478	14500	0000	00000	3176
0010	0124	30928		2479	14495	0032	00002	3169
0020	0125	30935		2479	14497	0064	00007	3164
0030	0154	31175		2497	14515	0095	00014	2998

C-REF-NO 002	YR 1965	DEPTH 49	WAVES 1 2622	AIR T -00.5	VIS 8
CONS. NO 033	MONTH 11	MXSAMPD 00	WAVES 2 00XX	WET B -01.0	STN 033
LAT 47-505N	DAY 25	NO.DPTH 6	WND-DIR 230	WW-CODE 03	
LON 62-490W	HR 14.2	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
114	0000	020 B	31037		2483	14528
114	0010	0188	31025		2482	14525
114	0020	0187	31024		2482	14526
114	0030	0187	31026		2483	14527
114	0040	0216	31393		2510	14547
114	0050	0192	31782		2543	14543

*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0200 B	31037		2483	14528	0000	00000	3132
0010	0188	31025		2482	14525	0032	00002	3134
0020	0187	31024		2482	14526	0063	00006	3134
0030	0187	31026		2483	14527	0095	00015	3132
0050	0192	31782		2543	14543	0152	00037	2561

C-REF-NO 002	YR 1965	DEPTH	58	WAVES 1 2522	AIR T 00.0	VIS 8
CONS. NO 034	MONTH 11	MXSAMPD	00	WAVES 2 00XX	WET B -01.2	STN 034
LAT 47-100N	DAY 25	NO.DPTH	6	WND-DIR 260	WW-CODE 02	
LON 63-100W	HR 18.1	W-COLOR		WND-SPD 11	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1018.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
181	0000	024 B	31056		2481	14546
181	0010	0224	31055		2482	14541
181	0020	0228	31085		2484	14545
181	0030	0238	31131		2487	14551
181	0040	0243	31156		2489	14556
181	0050	0234	31183		2492	14554

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0240 B	31056		2481	14546	0000	00000	3145
0010	0224	31055		2482	14541	0032	00002	3135
0020	0228	31085		2484	14545	0063	00006	3115
0030	0238	31131		2487	14551	0094	00014	3087
0050	0234	31183		2492	14554	0156	00040	3045

PART II

by

CSS "Baffin"

(CODC Reference: 10-65-003)

DEPARTMENT OF ENERGY, MINES AND RESOURCES

MARINE SCIENCES BRANCH

HALIFAX SECTION

Ship:	CSS "Baffin"
Local cruise designation:	BIO 4065
Cruise period:	December 7 - December 10, 1965
Observers:	T. R. Foote E. A. Lewis W. G. Warshick

BEDFORD INSTITUTE OF OCEANOGRAPHY, Dartmouth, N. S.

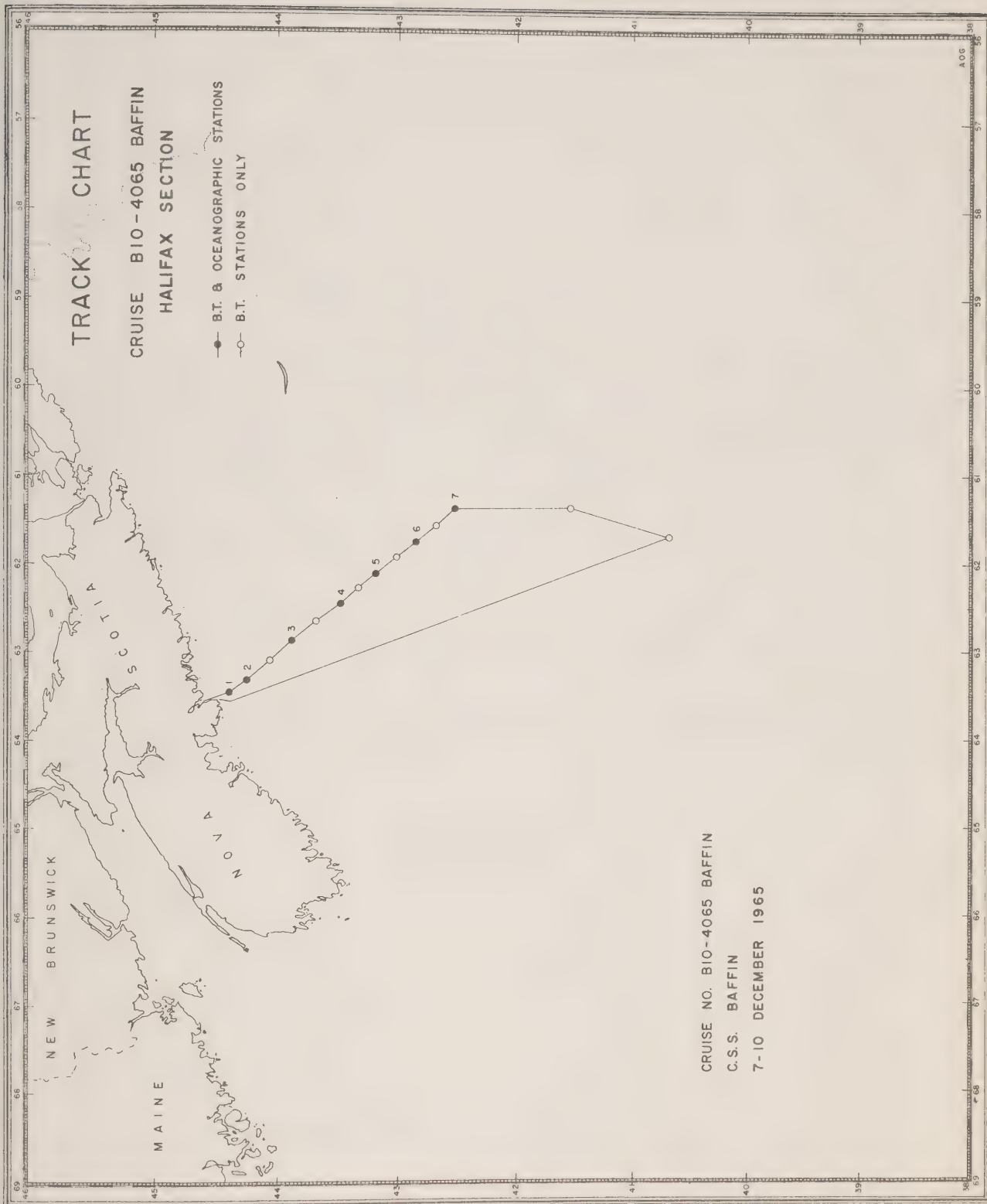
SECTION I

Description of data collection procedures

TRACK CHART

CRUISE BIO-4065 BAFFIN
HALIFAX SECTION

● B.T. & OCEANOGRAPHIC STATIONS
○ B.T. STATIONS ONLY



CRUISE NO. BIO-4065 BAFFIN
C.S. BAFFIN
7-10 DECEMBER 1965

INTRODUCTION

The object of this cruise was to reoccupy the "Halifax Section" of oceanographic and bathythermograph stations.

EXTRACT OF CRUISE LOG

Depart Halifax, N. S.

7 December 1965

Return Halifax, N. S.

10 December 1965

OBSERVATIONAL PROCEDURES

Temperature and salinity data were collected in single casts at seven stations along the "Halifax Section". Bathythermograph lowerings were made at each station and between each station, except stations 1 and 2. Standard sampling procedures and depths were used. Two Richter and Wiese protected thermometers were used on Knudsen type sampling bottles along with a Richter and Wiese unprotected thermometer on bottles at 200 metres and below.

Water depths were obtained with the Alden 411-PGR.

Salinities were determined on board with an Auto-Lab conductivity bridge.

Weather observations were made at each station by the ship's officers.

Bathythermograph lowerings were made just prior to the oceanographic casts. The bathythermograph data were processed at the Canadian Oceanographic Data Centre.

PERSONNEL

At Sea:

T. R. Foote

Officer-in-Charge

E. A. Lewis

W. G. Warshick

Data Analyses

Compilation of data:

T. R. Foote

W. G. Warshick

Salinity determinations:

W. G. Warshick

SECTION 11

Description of the machine-generated data record

SEE SECTION II OF PART I

SECTION 111

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation Platform:</u>	CSS "Baffin"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number of stations occupied:</u>	7
<u>Anemometer Height above sea level:</u>	22 metres
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Wet bulb temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 003	YR 1965	DEPTH	91	WAVES 1 3022	AIR T 00.0	VIS 8
CONS. NO 001	MONTH 12	MXSAMPD	01	WAVES 2 1545	WET B -02.0	STN 001
LAT 44-241N	DAY 07	NO.DPTH	6	WND-DIR 300	WW-CODE 02	
LON 63-275W	HR 21.9	W-COLOR		WND-SPD 06	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1014.5	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
219	0000	052 B	31264		2472	14669
219	0010	0529	31222		2468	14673
219	0020	0522	31309		2475	14673
219	0030	0504	31618		2502	14672
219	0050	0419	31945		2536	14644
219	0075	0331	32266		2570	14615

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0520 B	31264		2472	14669	0000	00000	3233
0010	0529	31222		2468	14673	0033	00002	3275
0020	0522	31309		2475	14673	0065	00007	3203
0030	0504	31618		2502	14672	0096	00015	2953
0050	0419	31945		2536	14644	0152	00037	2623
0075	0331	32266		2570	14615	0214	00076	2303

C-REF-NO 003	YR 1965	DEPTH 151	WAVES 1 3022	AIR T 00.0	VIS 8
CONS. NO 002	MONTH 12	MXSAMPD 01	WAVES 2 1545	WET B -02.0	STN 002
LAT 44-156N	DAY 07	NO.DPTH 8	WND-DIR 300	WW-CODE 02	
LON 63-191W	HR 23.2	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1016.2	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
232	0000	050 B	31021		2455	14657
232	0010	0500	31008		2454	14659
232	0020	0499	31009		2454	14660
232	0030	0502	31014		2454	14663
232	0050	0646 B	31750		2495	14735
232	0075	0228	32622		2607	14575
232	0100	0221	32872		2628	14579
232	0140	0414	33624		2670	14679

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0500 B	31021		2455	14657	0000	00000	3395
0010	0500	31008		2454	14659	0034	00002	3406
0020	0499	31009		2454	14660	0068	00007	3405
0030	0502	31014		2454	14663	0103	00016	3405
0050	0646 B	31750		2495	14735	0167	00042	3015
0075	0228	32622		2607	14575	0230	00080	1950
0100	0221	32872		2628	14579	0276	00122	1757
0125	0247 I	3346 I		2672	14603	0315	00166	1336

C-REF-NO 003	YR 1965	DEPTH 259	WAVES 1 3022	AIR T 00.0	VIS 7
CONS. NO 003	MONTH 12	MXSAMPD 02	WAVES 2 1544	WET B -00.3	STN 003
LAT 43-531N	DAY 08	NO.DPTH 9	WND-DIR 280	WW-CODE 70	
LON 62-526W	HR 02.1	W-COLOR	WND-SPD 08	CLD-TPE 8	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1017.7	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
021	0000	062 B	31454		2475	14712
021	0010	0617	31444		2475	14712
021	0020	0618	31443		2475	14714
021	0030	0661	31579		2480	14735
021	0050	0530	32859		2597	14702
021	0075	0354	33304		2651	14639
021	0100	0447	33686		2672	14687
021	0149	0604	34265		2699	14767
021	0199	0608	34390		2708	14779

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620 B	31454		2475	14712	0000	00000	3201
0010	0617	31444		2475	14712	0032	00002	3206
0020	0618	31443		2475	14714	0064	00007	3209
0030	0661	31579		2480	14735	0096	00015	3159
0050	0530	32859		2597	14702	0149	00035	2051
0075	0354	33304		2651	14639	0194	00063	1540
0100	0447	33686		2672	14687	0230	00096	1346
0125	0539 C	3402 C		2688	14734	0262	00132	1197
0150	0588 F	3424 H		2699	14760	0291	00173	1098
0175	0611 D	3436 E		2705	14775	0318	00218	1039
*0200	0607	34389		2708	14778	0344	00268	1016

C-REF-NO 003	YR 1965	DEPTH	76	WAVES 1 3022	AIR T 00.2	VIS 8
CONS. NO 004	MONTH 12	MXSAMPD	01	WAVES 2 1544	WET B -00.2	STN 004
LAT 43-288N	DAY 08	NO.DPTH	6	WND-DIR 300	WW-CODE 02	
LON 62-273W	HR 05.1	W-COLOR		WND-SPD 08	CLD-TPE 8	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1019.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
051	0000	071 B	31982		2505	14755
051	0010	0715	31988		2505	14759
051	0020	0716	31986		2505	14761
051	0030	0717	31987		2505	14763
051	0050	0716	32037		2509	14766
051	0070	0341	33066		2633	14629

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0710 B	31982		2505	14755	0000	00000	2915
0010	0715	31988		2505	14759	0029	00002	2918
0020	0716	31986		2505	14761	0059	00006	2922
0030	0717	31987		2505	14763	0088	00014	2924
0050	0716	32037		2509	14766	0147	00037	2888

C-REF-NO 003	YR 1965	DEPTH	96	WAVES 1 3022	AIR T 00.4	VIS 8
CONS. NO 005	MONTH 12	MXSAMPD	01	WAVES 2 1544	WET B -00.1	STN 005
LAT 43-11CN	DAY 08	NO.DPTH	6	WND-DIR 300	WW-CODE 02	
LON 62-060W	HR 07.5	W-COLOR		WND-SPD 08	CLD-TPE 8	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1019.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
075	0000	065 B	31946		2510	14731
075	0010	0641	31898		2508	14728
075	0020	0694	32028		2511	14752
075	0030	0713	32083		2513	14762
075	0049	0642	32102		2524	14737
075	0074	0684	33315		2614	14774

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0650 B	31946		2510	14731	0000	00000	2868
0010	0641	31898		2508	14728	0029	00001	2894
0020	0694	32028		2511	14752	0058	00006	2863
0030	0713	32083		2513	14762	0087	00013	2847
0050	0682 I	3229 I		2533	14756	0142	00036	2659
0075	0684	3337 C		2618	14775	0199	00071	1854

C-REF-NO 003	YR 1965	DEPTH 987	WAVES 1 3122	AIR T 01.1	VIS 8
CONS. NO 006	MONTH 12	MXSAMPD 08	WAVES 2 49XX	WET B 00.0	STN 006
LAT 42-153N	DAY 08	NO.DPTH 14	WND-DIR 300	WW-CODE 02	
LON 61-448W	HR 10.3	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.1	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
103	0000	059 B	31723		2500	14703
103	0010	0593	31719		2500	14706
103	0019	0592	31718		2500	14707
103	0028	0591	31718		2500	14708
103	0047	0470 B	32416		2568	14671
103	0071	0236	32883		2627	14581
103	0095	0220	33249		2658	14583
103	0142	0182	33648		2693	14580
103	0190	0352	34200		2722	14669
103	0285	0351	34483		2745	14688
103	0381	0403	34688		2756	14728
103	0477	0447	34870		2765	14765
103	0574	0423	34867		2768	14771
103	0770	0397	34896		2773	14793

*TIME-DISTANCE CHECK FAILED

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0590 B	31723		2500	14703	0000	00000	2965
0010	0593	31719		2500	14706	0030	00002	2972
0020	0593	31713		2499	14708	0060	00006	2978
0030	0583	3178 G		2505	14706	0089	00014	2920
0050	0437 C	3249 B		2578	14659	0141	00034	2231
0075	0226 C	32951		2634	14578	0191	00065	1699
0100	0211 B	3330 C		2662	14581	0230	00100	1427
0125	0185 D	3352 G		2682	14576	0264	00138	1240
0150	0207 D	3374 C		2698	14593	0293	00180	1088
0175	0294 F	3403 E		2714	14639	0319	00222	0942
0200	0361 D	3426 E		2726	14675	0341	00265	0840
0225	0375 I	3437 I		2733	14686	0361	00309	0769
*0250	0374 I	3445 I		2739	14691	0380	00355	0715
0300	0358	34518		2747	14694	0414	00452	0648
0400	0415	3473 B		2758	14737	0475	00668	0557
0500	0444	3488 B		2766	14768	0528	00912	0493
0600	0441 F	3493 I		2771	14784	0577	01184	0461
0700	0423 D	3493 G		2773	14793	0623	01491	0447

C-REF-NO 003 YR 1965 DEPTH 2048 WAVES 1 3221 AIR T 01.6 VIS 8
 CONS. NO 007 MONTH 12 MXSAMPD 10 WAVES 2 49XX WET B 00.2 STN 007
 LAT 42-320N DAY 08 NO.DPTH 15 WND-DIR 320 WW-CODE 02
 LON 61-228W HR 13.5 W-COLOR WND-SPD 06 CLD-TPE 6
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1022.3 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
135	0000	071 B	32172		2520	14757
135	0010	0708	32142		2518	14758
135	0020	0831	32483		2528	14812
135	0030	0826	32476		2528	14811
135	0049	0731	32417		2537	14777
135	0074	0657	33158		2605	14761
135	0099	0265	33481		2673	14607
135	0148	0495	34334		2718	14724
135	0197	0446	34487		2735	14713
135	0296	0432	34686		2752	14726
135	0394	0487	34893		2763	14768
135	0492	0459	34935		2769	14773
135	0591	0440	34950		2772	14782
135	0789	0401	34927		2775	14798
135	0988	0387	34929		2776	14826

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0710 B	32172		2520	14757	0000	00000	2773
0010	0708	32142		2518	14758	0028	00001	2794
0020	0831	32483		2528	14812	0056	00006	2707
0030	0826	32476		2528	14811	0083	00013	2707
0050	0731 B	3244 C		2539	14777	0136	00034	2605
0075	0641 B	33174		2608	14755	0194	00070	1948
0100	0264 C	33500		2674	14607	0235	00106	1316
0125	0322 I	3396 I		2706	14642	0264	00140	1021
0150	0495	3435 B		2719	14724	0288	00174	0908
0175	0484 F	3446 I		2729	14725	0310	00210	0811
0200	0444	34494		2736	14713	0330	00247	0747
0225	0433	3455 B		2742	14713	0348	00287	0696
*0250	0427	3460 B		2746	14716	0365	00328	0653
0300	0434	34696		2753	14728	0397	00417	0596
0400	0486	34898		2763	14769	0453	00617	0515
0500	0457	34937		2770	14774	0502	00844	0464
0600	0438	34949		2773	14783	0548	01103	0442
0700	0417	3494 B		2774	14791	0592	01399	0435
0800	0404 B	3494 C		2776	14802	0636	01736	0428
1000	0386	34928		2776	14827	0723	02548	0436

PART III

by

CSS "Baffin"

(CODC Reference: 10-65-004)

DEPARTMENT OF ENERGY, MINES AND RESOURCES
MARINE SCIENCES BRANCH

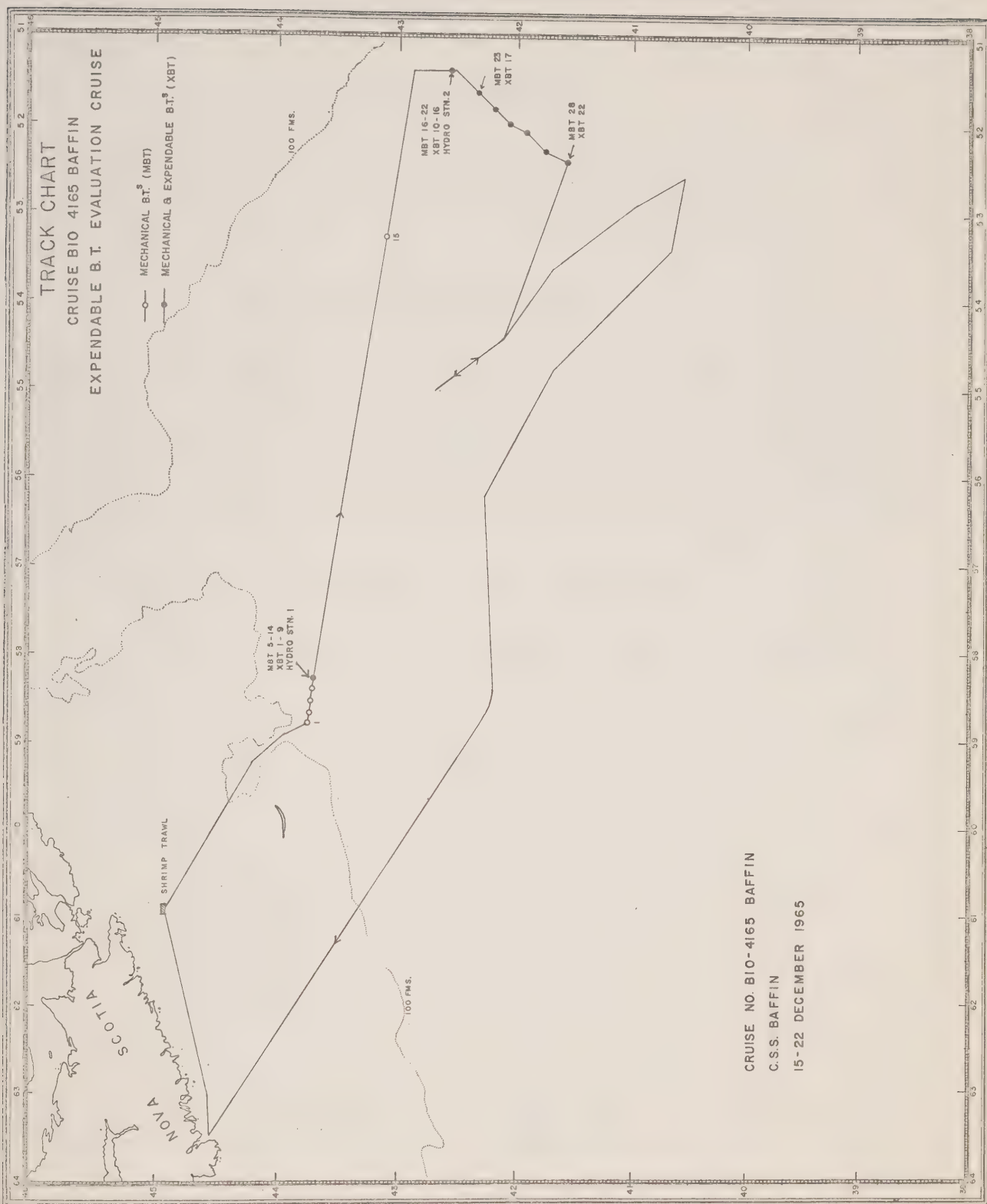
SCOTIAN SHELF TO GRAND BANKS

Ship:	CSS "Baffin"
Local cruise designation:	BIO 4165
Cruise period:	December 15 - December 22, 1965
Observers:	T. R. Foote C. D. Maunsell W. B. Bailey R. R. Weiler E. A. Lewis

BEDFORD INSTITUTE OF OCEANOGRAPHY, Dartmouth, N. S.

SECTION I

Description of data collection procedures



INTRODUCTION

The object of this cruise was to perform a series of experiments to evaluate an expendable bathythermograph system.

EXTRACT OF CRUISE LOG

Depart Halifax, N. S. 15 December 1965

Return Halifax, N. S. 22 December 1965

OBSERVATIONAL PROCEDURES

The oceanographic station temperature and salinity data were collected in single casts using standard sampling procedures. Sampling depths were spaced at equal intervals (30 metres) from the surface to 500 metres, the maximum recording depth of the expendable B. T. system. Two Richter and Weise protected thermometers were used on Knudsen type sampling bottles along with one Richter and Weise unprotected thermometer on bottles at 270 metres and below. Water samples were returned to the Bedford Institute of Oceanography for salinity determinations on one of the NIO salinometers.

Water depths were obtained with the Alden 411-PGR.

The bathythermograph data were processed at the Canadian Oceanographic Data Centre.

PERSONNEL

At Sea:

T. R. Foote	Officer-in-Charge
C. D. Maunsell	
W. B. Bailey	
R. R. Weiler	
M. P. Reddy	
E. A. Lewis	

Data Analyses

Compilation of Data:	T. R. Foote C. D. Maunsell
Salinity determinations:	B. Price

SECTION 11

Description of the machine-generated data record

SEE SECTION II OF PART I .

SECTION 111

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation Platform:</u>	CSS "Baffin"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number of stations occupied:</u>	2
<u>Anemometer Height above sea level:</u>	22 metres
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Wet bulb temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 004	YR 1965	DEPTH 2337	WAVES 1 1022	AIR T 03.3	VIS 8
CONS. NO 001	MONTH 12	MXSAMPD 04	WAVES 2 00XX	WET B 02.2	STN 001
LAT 43-425N	DAY 17	NO.DPTH 15	WND-DIR 100	WW-CODE 02	
LON 58-163W	HR 06.4	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1015.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
064	0000	035 B	32335		2574	14611
064	0030	0520	32941		2604	14696
064	0059	0543	33030		2609	14711
064	0088	0342	33549		2671	14639
064	0118	0342	33809		2692	14647
064	0147	0446 B	34213		2713	14701
064	0177	0543	34504		2725	14750
064	0206	0364	34358		2733	14679
064	0236	0402	34479		2739	14701
064	0265	0438	34619		2746	14723
064	0295	0429	34689		2753	14725
064	0324	0444	34764		2757	14737
064	0354	0442	34805		2761	14742
064	0384	0435	34811		2762	14744
064	0412	0430				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	32335		2574	14611	0000	00000	2263
0010	0433 C	3249 I		2578	14650	0023	00001	2225
0020	0495 D	3264 I		2583	14680	0045	00005	2175
0030	0520	32941		2604	14696	0066	00010	1976
0050	0555 B	3301 I		2605	14714	0105	00026	1969
0075	0434 I	3331 I		2643	14672	0150	00055	1616
0100	0323 B	3366 F		2682	14634	0187	00086	1245
0125	0363 B	3391 C		2698	14659	0216	00120	1100
0150	0462 C	3426 B		2715	14709	0242	00156	0941
0175	0541 B	34494		2725	14749	0264	00194	0855
0200	0403 G	3440 F		2732	14695	0285	00233	0779
0225	0375 D	3442 C		2737	14687	0304	00275	0735
0250	0422	3455 B		2743	14713	0322	00319	0687
0300	0431	34703		2754	14727	0354	00409	0588
0400	0433							

C-REF-NO 004 YR 1965 DEPTH 905 WAVES 1 0933 AIR T 02.5 VIS 8
 CONS. NO 002 MONTH 12 MXSAMPD 04 WAVES 2 00XX WET B 01.5 STN 002
 LAT 42-320N DAY 18 NO.DPTH 15 WND-DIR 100 WW-CODE 02
 LON 51-220W HR 09.2 W-COLOR WND-SPD 12 CLD-TPE 7
 MARSD SQ 150 C/I 1810 W-TRNSP BARO 1013.8 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
092	0000	020 B	33196		2655	14558
092	0029	0193	33188		2655	14559
092	0058	0198	33263		2661	14567
092	0087	0170	33649		2693	14565
092	0116	0770	34732		2713	14833
092	0145	0741 B	34838		2725	14828
092	0174	0565	34693		2738	14761
092	0203	0419	34600		2747	14705
092	0232	0323	34490		2748	14667
092	0261	0368	34651		2756	14693
092	0290	0376	34679		2758	14702
092	0320	0386	34712		2759	14711
092	0349	0391	34726		2760	14719
092	0378	0402	34753		2761	14728
092	0407	0408	34771		2762	14736

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0200 B	33196		2655	14558	0000	00000	1493
0010	0201 B	3316 D		2652	14560	0015	00001	1523
0020	0201 B	3314 G		2651	14561	0031	00003	1535
0030	0193	33187		2655	14560	0046	00007	1496
0050	0198	3322 C		2657	14565	0076	00019	1473
0075	0146 I	3343 E		2678	14549	0110	00041	1281
0100	0439 I	3415 I		2709	14690	0139	00066	0988
0125	0803 I	3483 I		2716	14849	0163	00094	0941
0150	0715 C	3482 C		2728	14819	0186	00126	0829
0175	0559	34690		2738	14759	0205	00158	0730
0200	0432	34609		2746	14710	0223	00192	0649
0225	0337 B	3451 C		2748	14672	0239	00227	0632
0250	0345 D	3458 E		2753	14681	0254	00264	0584
0300	0380	34691		2758	14705	0283	00344	0541
0400	0406	34766		2762	14734	0336	00537	0523

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PRINTED PUBLICATIONS OF THE CANADIAN OCEANOGRAPHIC DATA CENTRE
IN THE 1966 DATA RECORD SERIES

NO.	TITLE	CODC REFERENCE
1	Ocean Weather Station "P"	02-65-001
2	Western North Atlantic and Caribbean Sea	03-65-001
3	Ocean Weather Station "P"	02-65-003
4	Arctic Hudson Bay and Hudson Strait	359
5	Ocean Weather Station "P"	02-65-006
6	Ocean Weather Station "P"	02-65-009
7	Gulf Stream between Cape Cod and Bermuda	10-64-028
8	Ocean Weather Station "P"	02-65-011
9	Gulf of St. Lawrence and Halifax Section	10-64-029

